Phase II - Detailed Site Investigation

Abbotts Road and Aldington Road Upgrade, Kemps Creek NSW

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Abbreviations

AAM	Airborne Asbestos Monitoring
ACM	Asbestos Containing Material
ADE	ADE Consulting Group Pty Ltd
AHD	Australian Height Datum
ASS	Acid Sulfate Soils
BGL	Below ground level
BTEX	Benzene, toluene, ethylbenzene, xylene
BR	Blind Replicate
CoC	Chain of Custody
CoPC	Contaminants of Potential Concern
CRC CARE	Contamination Assessment and Remediation of the Environment
CSM	Conceptual Site Model
DBYD	Dial Before You Dig
DP	Deposited Plan
DQO	Data Quality Objectives
DSI	Detailed Site Investigation
EC	Electrical Conductivity
EILs	Ecological Investigation Levels
EPA	NSW Environmental Protection Authority
ESLs	Ecological Screening Levels
HILs	Health Investigation Levels
HSLs	Health Screening Levels
m BGL	Meters Below Ground Level
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environmental Protection (Assessment of Site Contamination) Measure
NSW	New South Wales
OCP	Organophosphorus Pesticides
OEH	Office of Environment and Heritage
OPP	Organochlorine Pesticides
PACM	Potential Asbestos Containing Material
PAHs	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PID	Photo-ionisation Detector
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance/Quality Control
RAP	Remedial Action Plan
RPD	Relative Percent Difference
SAC	Site Assessment Criteria
SEPP	State Environmental Planning Policy
SH&EWMS	Safety Health and Environmental Works Method Statement
SMF	Synthetic Mineral Fibres
SLS	Sydney Laboratory Services
SWL	Standing Water Level
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
VOC	Volatile Organic Compounds

Executive Summary

ADE Consulting Group Pty Ltd (ADE) was engaged by AT&L ('client') who is acting on behalf of a consortium of multiple stakeholders to undertake a Phase II - Detailed Site Investigation (DSI) within the nature strip situated at the intersection of Abbotts and Aldington Road, Kemps Creek, New South Wales (NSW) ('site') (refer to *Appendix I – Figures*). ADE understand that the proposed development extends from Mamre Road to the Abbotts Road reserve at the western end to the intersection of Abbotts and Aldington Road and Aldington Road reserve from the junction to the north. The total route length is estimated at 4.04 km and extends 5 metres onto private land on both sides of the public road. The total route length consists of:

- 2.85 kms for Abbotts and Aldington Roads; and
- 1.19 kms for Abbotts and Mamre Roads.

The purpose of this investigation is to provide a comprehensive contamination assessment which will act as supporting information to facilitate the proposed development occurring as part of the LOG- East: Abbotts, Aldington, and Mamre Road Upgrade. The primary objective of the investigation is to undertake an intrusive investigation to assess the current contamination status of soil and evaluate any potential risks to human health or the environment.

As a component of the desktop study, a preliminary conceptual site model (CSM) was developed to identify potential sources of contamination, including suspected use of historical cut and fill practices, potential hazardous materials including asbestos and coal tar, run-off associated with pesticide/herbicide application, 'fly tipping', timber power poles and high automotive traffic volumes which have the potential to result in emissions and spills/leaks.

Using the preliminary CSM as a basis for the investigation, a systematic soil sampling approach was developed and involved environmental test pits at approximate 30 metre linear intervals across the entire length of the road. A total of 87 sampling locations involving a mixture of visual (43) and full sampling (44) test pits were advanced using both an excavator and hand tools to a maximum depth of 1.9 m below ground level (m BGL).

The local lithological profile typically comprised of both topsoil and engineered fill (0.0 – 1.8 m BGL) and natural residual clays and highly weathered pockets of Bringelly shale (0.3 – 1.9 m BGL). Specific areas along the road shoulder were noted to contain a high presence foreign material likely attributed to 'fly tipping' and dumping of household general waste products.

A total of 64 primary soils samples were collected across the course of the investigation and were analysed at a NATA accredited laboratory for a wide range of contaminants of potential concern (CoPCs) including heavy metals, total recoverable hydrocarbons (TRHs) / total petroleum hydrocarbons (TPHs), polycyclic aromatic hydrocarbons (PAHs), benzene, toluene, ethyl-benzene, xylene, naphthalene (BTEXN), organochlorine pesticides (OCPs)/organo-phosphate pesticides (OPPs), poly-chlorinated biphenyls (PCBs), per-and poly-fluoroalkyl substances (PFAS) and asbestos.

Based on the findings of the investigation, all samples demonstrated chemical concentrations below the human health screening criteria for a commercial industrial land use context (HIL/HSL D) and are suitable for the proposed land use.

To provide indicative off-site disposal options for the material, a further comparison assessment was made against the NSW EPA Waste Classification Guidelines 2014; 2016 and the ANZECC (2000) and D.A. Berkman Geological Background Ranges (1989). The fill materials encountered across the site typically exhibited chemical concentrations suitable for a chemical classification as 'General Solid Waste', except for recorded exceedances for lead, nickel, and benzo(a)pyrene. After statistical analysis, it was determined that both lead and nickel showed a non-conforming UCL calculation and a dataset that was significantly skewed. As a result, further evaluation was deemed necessary, and the completion of TCLP analysis was recommended.

Of 17 representative natural soil samples, 7 samples returned concentrations above the adopted geological background ranges and are therefore not considered to be complaint as Virgin Excavated Natural Material (VENM). It is noted that due to the limited dataset, further sampling would be required to make a complete assessment and areas of non-conforming soil may be subject to further delineation sampling to facilitate to off-site disposal, or on-site beneficial reuse, of soils compliant as VENM.

Based on the findings of the investigation, ADE considers the site is suitable for the prescribed land use as commercial/industrial land (HIL/HSL-D) with minor landscaped areas. The site is not considered to warrant the requirement of a remediation action plan (RAP).

Due to the current land-use of the site, ADE recommends that construction sub-management plans i.e., asbestos management plans (AMP) and construction environmental management plan (CEMP) are implemented during the construction phase to manage future unexpected finds.

1 Introduction

1.1 Background and General Information

ADE Consulting Group Pty Ltd (ADE) was engaged by AT&L Pty Ltd (AT&L, the Client) to undertake a detailed site investigation (DSI) within the road corridor along Abbotts and Aldington Road Kemps Creek, New South Wales (NSW) hereafter referred to as "the Site") (refer to *Appendix I – Figures*). The Site is situated within the Local Government Area of Penrith City Council and is currently zoned as 'IN1 – Private General Industrial'. The subject site area is approximately 2.85 km long and comprises of:

Road reserves:

- From the western end of Abbotts Road to the Abbotts/Aldington intersection;
- From Abbotts/Aldington intersection to the northern part of Aldington Road;

Five (5) metres extension from road reserves to both sides of private land, including:

- Lot 1 and 2 of Deposited Plan (DP) 250002;
- Lot 141 and 142 of DP 1033686;
- Lot 8, 9, 10, 13, 15, 16, 17 and 18 of DP 253503;
- Lot 20, 21, 22, 23, 24, 25, 26, 27 and 28 of DP 255560;
- Lot 30, 31, 32, 33, 34, 35, 36 and 37 of DP 258949; and
- Lot 38, 41 and 42 of DP 708347.

ADE understands that AT&L's scope of works for the project is restricted to the demolition and early enabling works of soils down to a maximum depth of 1.8 metres below ground level (mBGL). The purpose of this investigation was to provide a contamination assessment of residual soils and to compare results against relevant human health criteria (HIL-D / HSL-D) for screening purposes.

Consideration of landscaping areas with access to soil have not been assessed since the design of the upgrade is not finalised and consideration of this has not been included within AT&L's scope of works for this project.

A previous preliminary site investigation (PSI) had been undertaken by ADE (2022), which comprised:

- The appraisal of the site's history and the current site condition and surrounding environment; and
- Completion of a visual inspection on-site to identify signs or indications of potential sources of contamination and the associated contaminants of potential concern (CoPCs).

The current investigation was undertaken with a systematic soil sampling approach and provides an assessment as to the current contamination status of the site in relation to the findings of the PSI. This report summarises the findings of the previously completed PSI (ADE, 2021) and current DSI works, and discusses the outcomes of the investigation.

1.2 Objectives

The primary objective of this investigation is to characterise fill material that may be subject to excavation as part of the proposed development. The objectives of this investigation will be achieved by:

- Summarising past and present potentially contaminating activities through a desktop study supported by information obtained from the Phase I PSI (ADE 2022);
- Assessing the contamination status of the site, which may have been impacted by past / present land use and/or off-site contamination from the surrounding area;

- Completing an intrusive investigation program developed in accordance with the NSW Environment Protection Authority (EPA) 1995 *Sampling Design Guidelines* (NSW EPA, 1995) and National Environment Protection (Assessment of Site Contamination) Measure 1999, 2013 Amendment (NEPC 2013);
- Assessing and describing the source, type, extent and level of contamination by comparing the collected soil data against the adopted SAC outlined in guidelines including, but not limited to, NEPM (NPEC, 2013), PFAS National Environmental Management Plan v2.0 (NEMP, 2020) and other relevant guidelines, as outlined throughout this report;
- Determine the potential risks posed to human health and environment (if present); and
- Provide an assessment of the site and develop recommendations for remedial works or ongoing management based on the findings (if required).

1.3 Scope of Work

The scope of work required to achieve the objectives of the investigation involved the following:

1.3.1 Phase One – Desktop Review

- Desktop review of the site plans, previous environmental investigations
- Obtain and review Dial Before You Dig (DBYD) documentation
- Preparation of a site-specific health and safety Safe Work Method Statement (SWMS)

1.3.2 Phase Two - Field Investigation

- Understanding and sign on to a job specific Safety, Health & Environmental Work Method Statement (SH&EWMS) and the completion of a toolbox talk before undertaking works.
- Undertake underground service locating via an approved service locator
- Advancement of 94 test pits (TP101 – TP194A) across the site (using an eight-tonne excavator with trenching bucket attachment) under traffic control
- Field logging of soil profile and site observations
- Soil sampling of the fill and natural soils to a maximum depth of 2.0 metres below ground level (mBGL)
- Field screening of soil samples using a calibrated photo-ionisation detector (PID) to assess the potential presence of ionisable volatile organic compounds (VOCs)
- Completion of standard quality assurance/quality control (QA/QC) protocols
- Cold storage of all soil samples collected and analysis of samples for the following analytes based on the findings outlined in the Stage I PSI (ADE, 2022) and submission to a NATA accredited laboratory under full chain of custody documentation for the following contaminants of potential concern (COPC):
    - Asbestos (500 mL NEPM sample),
    - Total recoverable Hydrocarbons (TRH)
    - Benzene, Toluene, Ethylbenzene and xylene (BTEX),
    - Heavy Metals (Arsenic, Cadmium Chromium, Copper, Lead, Mercury, Nickel and Zinc),
    - Organochlorine Pesticides (OCP) and Organophosphate Pesticides (OPP)
    - Polycyclic Aromatic Hydrocarbons (PAHs),
    - Polychlorinated Biphenyl (PCB),
    - Per-and Polyfluoroalkyl Substances (PFAS).

1.3.3 Phase Three – Data Assessment and Reporting

- Interpretation of analytical results and field observations in accordance with relevant guidelines and codes of conduct described below in Section 1.4
- Preparation of a DSI report outlining the investigation, interpretation of results, and including conclusions and recommendations with reference to the proposed development.

1.4 Legislative Requirements

The legislative framework for the report is based on guidelines that have been issued and/or endorsed by the NSW EPA under the following Acts/Regulations:

- Contaminated Land Management Act 1997 (NSW) (CLM Act)
- Environmentally Hazardous Chemicals Act 1985 (NSW)
- National Environment Protection (Assessment of Site Contamination) Measure [NEPM], 1999 (as amended 2013) (NEPC, 2013)
- Protection of the Environment Operations Act 1997 (NSW) (POEO Act)
- State Environmental Planning Policy No.55 – Remediation of Land (NSW Government)
- Waste Avoidance and Resource Recovery Act 2001
- Work Health and Safety Act 2011, and
- Work Health and Safety Regulation 2017.

The investigation was carried out in compliance with the following principal acts and regulations, and national and international guidance:

- Friebel & Nadebaum. (2011). Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater, Part 1: Technical Development Document, Technical Report No. 10,
- Friebel & Nadebaum. (2011). Health Screening levels for Petroleum Hydrocarbons in Soil and Groundwater, Part 2: Application Document, Technical Report No. 10,
- Guidelines for the NSW Site Auditor Scheme (3rd Edition), NSW 2017,
- NSW EPA. (2022). Sampling Design Part 1 – Application (Contaminated Land Guidelines),
- NSW EPA. (2014). Waste Classification Guidelines – Part 1: Classifying Waste (2014) (NSW EPA, 2014),
- NSW EPA. (2015). Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (NSW EPA, 2015),
- NSW EPA. (2020). Guidelines for Consultants Reporting on Contaminated Land (NSW EPA, 2020),
- NSW Safework. (2022). Model Code of Practice: How to Safely Remove Asbestos (NSW Safework, 2022),
- NSW Safework. (2022). Code of Practice: How to Manage and Control Asbestos in the Workplace (NSW Safework, 2022),
- Heads of EPAs Australia and New Zealand [HEPA]. (2020). PFAS National Environmental Management Plan Version 2.0 - January 2020
- Protection of the Environment Operations Act 1997 (NSW) (POEO Act)
- Protection of the Environment Operations (Waste) Regulation 2014
- Western Australian Department of Health (WA DOH). (2021). Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia (WA DOH, 2021).

Australian Standards applied to this investigation:

- Standards Australia. (1998). AS/NZS5667.1-1998 Water Quality-Sampling. Part 1: Guidance on the Design of Sampling Programs, Sampling Techniques, and the Preservation of Handling Samples

- Standards Australia (1999). Australian Standard AS 4482.2 Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances, (1999)
- Standards Australia. (2005). Australian Standard AS 4482.1 Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds, (2005)

The following local government plan have also been taken into consideration for preparation of this DSI:

- Penrith Local Environmental Plan 2010 (LEP, 2010).
- Penrith Development Control Plan (DCP, 2014)

2 Site Identification

2.1 Site Location

The site comprises public road reserves and private land across multiple residential properties located at Abbotts and Aldington Road, Kemps Creek, NSW and has an approximate area of 1.2 hectares (ha). The Site comprises Abbotts Road reserve from the western end to Abbotts / Aldington intersection, Aldington Road reserve from the junction to the north, and five (5) metres extension to private land of both roadsides. The total route length of estimated at 2.8 km (refer to Figure 1).

The Site is situated within the Local Government Area (LGA) of Penrith City Council and is zoned as 'IN1 – General Industrial' under the Penrith City Planning Certificate under section 10.7(2) of the Environmental Planning and Assessment Act 1979 (NSW) (refer to *Appendix I – Figures* below for the location of the site).

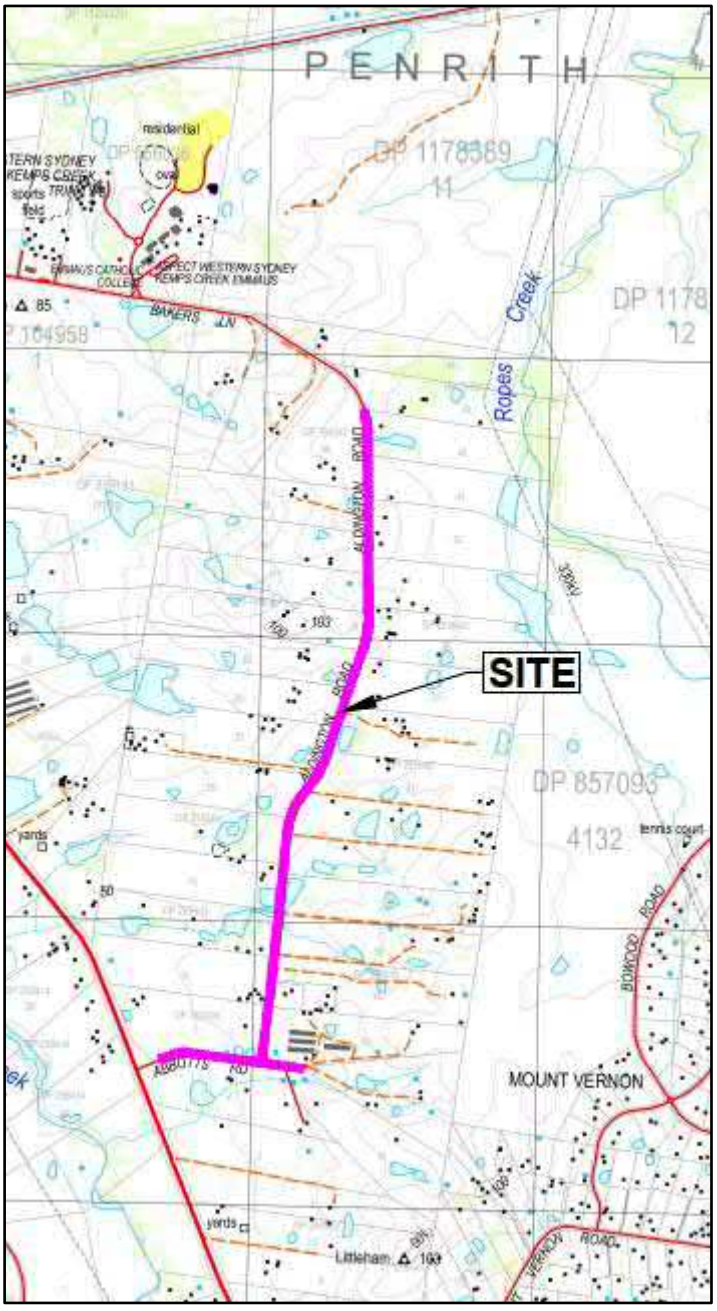


Figure 1: Approximate boundary of the site (outlined in blue).

2.2 Summary of Site Details

Table 1: Summary of Site Details and Information.

Site Details	
Site Name:	Abbotts Road and Aldington Road Upgrade
Site Address:	Abbotts Road and Aldington Road, Kemps Creek NSW 2178
Property Description:	The property consists of Abbotts Road and Aldington Road reserves and 5 metres of extension to private land on both roadsides.
Property Identification:	Road reserves: • From the western end of Abbotts Road to the Abbotts/Aldington intersection; • From Abbotts/Aldington intersection to the northern part of Aldington road; Five (5) metres extension to the private land, including: • Lot 1 and 2 of Deposited Plan (DP) 250002; • Lot 141 and 142 of DP 1033686; • Lot 8, 9, 10, 13, 15, 16, 17 and 18 of DP 253503; • Lot 20, 21, 22, 23, 24, 25, 26, 27 and 28 of DP 255560; • Lot 30, 31, 32, 33, 34, 35, 36 and 37 of DP 258949; and • Lot 38, 41 and 42 of DP 708347.
Current Owner (s):	Multiple owners
Current Occupier (s):	Multiple occupiers
Site Area:	Approximately 8.4 ha
Local Government Authority:	Penrith City Council
Land Use Zoning:	IN1 – Private General Industrial
Locality Map:	Refer to Figure 1 in 2.1 and *Appendix I – Figures*
Proposed end use:	Road
The trigger for Assessment:	Contamination assessment under a Phase II – Detailed Site Investigation to facilitate the proposed development occurring as part of the LOG- East: Abbotts, Aldington, and Mamre Road Upgrade.

3 Site Condition and Surrounding Environment

The Table 2 below represents a summary of the site conditions and surrounding environment.

Table 2: Summary of Site Conditions

Attribute	Description
Site Inspection details	The site inspection and soil sampling were undertaken between 23, 24 and 27 March 2023 by experienced environmental consultants. Details of site observations are presented in Table 3.
Topography and Elevation	The Site has a moderate to steep sloping surface ranging from 44-74 m Australian Height Datum (AHD). The lowest point (44 m) on-site is in the southwestern portion of the Site, with the highest point found at the northern part of the Site. As such, the Site is considered to have a moderate to steep gradient towards the southwest.
Surrounding Land Use	Immediately north of the Site is an environmental conservation area, Industrial development are under construction 300 m to the north of the Site. The Site is predominantly surrounded by agricultural land, vacant grassland/ paddocks and rural residential properties to the east, south and west.

Local Geology	The regional and local geology is outlined in the Penrith 1:100,000 Geological Sheet. Regional geology underlying the Site is typically described as Bringelly Shale, carbonaceous claystone, laminate, lithic sandstone and rare coal as part of the Wianamatta Group. The Site is located within the ERlu – Luddenham and REbt – Blacktown Soil Landscapes as defined by the NSW Office of Environment and Heritage (eSPADE):
Hydrology	No surface water body was identified on-site. The closest surface water body to the Site is Kemps Creek. The closest portion of Kemps Creek is found approximately 350 m west of the Site.
Acid Sulfate Soils	A review of the Atlas of Australian Acid Sulfate Soils outlined within the Land Insight Report (ADE PSI, 2022) identified the site situated within a 'extremely low' (1-5%) probability of encountering acid sulfate soils. The site is however, situated within an area which is classified as having a 'moderate hazard or risk' for dryland salinity to occur for years up to and including 2050 as per the National Assessment for Dryland Salinity.

A summary of observations made during the fieldworks undertaken by ADE are provided in **Table 3** and highlighted in *Appendix I – Figures* and *Appendix II – Photographs.*

Table 3. Key Site Observations.

Item	Key Observations
Site Use	Adjacent land uses to the road corridor are predominantly residential with some portions used for commercial use (such as the dairy production).
Existing Buildings / Structures	Structures such as driveways and fences were observed within the site boundary
Sumps/Drains	Multiple surface water drains were noted to be scattered throughout the various properties on-site, predominantly within artificial drainage lines, or along the road and curbing.
Presence of stockpiled materials	No stockpiles were observed on-site.
Industrial Liquid Waste Disposal	No industrial liquid waste disposal facilities were observed on-site.
Domestic Waste Disposal	Dumped domestic waste including vegetation, fabric, timber, fibre board, cardboard, carpet and black bin liners of mixed waste.
Existing Services	The site primarily has underground and above ground services such as low/high voltage electrical, water and gas.
Vegetation Type, Cover and Condition	Low-bearing vegetation were noted to be densely distributed throughout the site. No signs of vegetative stress were noted during the course of the investigation.
Hazardous Building Materials	Suspected asbestos containing materials (ACM) were observed at surface.
Fuel Storage Tanks (USTs/ASTs)	No above ground or underground fuel storage tanks were observed
Dangerous Goods	No dangerous goods items were identified within the site.
Surrounding Areas	Surrounding areas are predominantly used for residential and commercial land use purposes.

3.1 Site History

A review of historical aerial photographs indicate that the Site was predominantly agricultural/ pastoral creek crossing the Site (south near present Lot 10 and 17 of DP253503), until approximately 1986, when Abbotts Road and Aldington Road were marked with low-density residential properties established facing road reserves.

A review historical commercial and trade records for the site and surrounding areas between 1980-2005 identified land uses including a builder/contractor, dairy business, concrete contractor, and excavation and earthworks contractor. Two heritage items listed in the NSW public register were identified within 200 m of the Site, a Farmhouse (Site I.D. I14) and the Gateposts to Colesbrook (Site I.D. I13).

A review of the 'Contaminated Land – Record of Notices' listed by the NSW EPA under the Contaminated Land Management Act 1997 (CLM) did not identify any current notices within a 1km radius of the Site. A review of the 'List of NSW Contaminated Sites Notified to the EPA' listed by the NSW EPA under the Contaminated Land Management Act 1997 (CLM) does not identify any records as being notified as a contaminated Site within a 1km radius of the Site.

3.1.1 Previous Environmental Investigations

ADE previously undertook a preliminary Site Investigation (PSI) on behalf of AT&L to identify potential areas of concern and to provide a preliminary assessment of site contamination. For full details regarding site history, geology, topography, hydrology, and hydrogeology, refer to the PSI report (ADE, 2022a), which includes a comprehensive desktop study.

Based on a review of historical aerial photographs and the findings of a detailed site inspection, the following sources of potential contamination were identified:

- Unknown fill used across the proposal footprint before roads being established
- Hydrocarbons within soil associated with vehicle use on existing roads
- Agricultural use of land adjacent to the road
- Leaching of hydrocarbons from asphalt road
- Automotive fluid leaks during road operation
- Stockpiled construction & demolition waste, household waste/illegal dumping, and waste asphalt at road shoulders
- Timber preservative products (such as creosote) for use in timber power poles

ADE undertook several environmental investigations for numerous lots along Aldington Road, which overlap segments of the subject Site. Summaries of the reports are included in **Table 4** below.

Table 4: Summary of Environmental Investigations

Report	Scope of Work	Conclusions
ADE, 2022b – Detailed Site Investigation – 200 Aldington Road, Kemps Creek, dated 11 February 2022	ADE (2022a) undertook a Detailed Site Investigation for a site located at 200 Aldington Road, Kemps Creek NSW, which assessed part of lots 20-23 DP255560 and part of Lots 30 – 32 DP258949. The scope of the investigation involved the completion of a Phase I investigation which incorporated a	The lab results obtained from 'TP92', showed that all analytes were below the human health and ecological screening criteria assigned for a commercial and industrial land use context (HIL/HSL-D) (NEPC, 2013). The investigation recommended that further sampling is undertaken within the area to characterise and

	desktop review, field investigation and analytical test work.	understand the contamination status of the site.
ADE, 2022c – Detailed Site Investigation – 74 – 90 Aldington Road, Kemps Creek NSW, dated 30 March 2022	ADE (2022b) completed a Phase II - Detailed Site Investigation for the properties located at 74 – 90 Aldington Road, Kemps Creek NSW, or Part of lots 41 and 42 of DP708347. The assessment included Phase I desktop review, field investigation and analytical test work. A total of 83 samples were collected from across 55 primary test pit locations advanced across the area. Upon review, only two test pit locations ('TP1' and 'TP43'), were observed within/adjacent to the current investigation area. One fill sample and one natural sample were collected at each test pit.	The analytical results obtained from the above samples all retuned concentrations below the human health and ecological screening criteria assigned for a commercial and industrial land use context (HIL/HSL-D) (NEPC, 2013). All field PID readings returned negligible concentration and no visual/olfactory indications of potential contamination was noted. The investigation later recommended that further sampling is undertaken within the area to further characterise and understand the contamination status of the site.

4 Preliminary Conceptual Site Model

NEPM (NEPC, 2013) identifies a Conceptual Site Model (CSM) as a representation of information regarding contamination sources, exposure pathways and the potential receptors. The essential elements of a CSM include:

- Known (and potential) contamination sources and contaminants of concern
- Impacted media (e.g., soil, groundwater, surface water, soil vapour etc.)
- Human/ecological receptors and
- Potential/complete exposure pathways.

For the purposes of this report, the following qualitative risk assessment has been applied:

- **Low Risk** – the activities and related CoPC are likely to pose no or a low potential human health/environmental impact. Any impact is likely localised to a specific area of the Site;
- **Moderate Risk** – the activities and related CoPC are likely to pose potential for moderate human health/environmental impact. Any impact is likely localised to a specific area of the Site; and
- **High Risk** – the activities and related CoPC could pose a significant environmental impact. There is potential for impacts of the immediate local area of the site or off-site migration impacting surrounding human and/or environmental receptors.

4.1 Primary Sources for Contamination and Contaminants of Concern (COPC)

Based on the findings of the desktop study and site inspection, the following features as presented in **Table 5** were considered potential sources of contamination:

Table 5: Summary of potential contamination and COPC

Site Activity/ Observation	Source	Contaminant of Potential Concern
Unknown fill used across the route before roads were established	Imported fill materials	Heavy metals, TRH, BTEX, PAH, and asbestos containing materials, organochlorine pesticides, organophosphate pesticides
Existing roads	Asphalt or road bitumen constructed before 1987	PAHs, TRH, heavy metals

Site Activity/ Observation	Source	Contaminant of Potential Concern
	Emissions from vehicles	
Road shoulders	Imported fill materials	Heavy metals, TRH, BTEX, PAH, and asbestos containing materials, organochlorine pesticides, organophosphate pesticides
	Timber power poles	OCP, OPP, phenols
	Waste tyres	Hazardous waste classification
Agricultural land adjacent to road	Application of pesticide to agricultural land	OCP, OPP, heavy metals
Waste dumping	Stockpiled construction and demolition waste/ asphalt/ road base materials	TRHs, PAHs, heavy metals, asbestos, phenols, PCBS, BTEX,
	Dumped domestic waste	Asbestos, heavy metals, hydrocarbons

4.2 Primary Transport Mechanisms

The primary transport mechanisms for the migration of potential contaminants onto the site from adjacent areas, within the site or from the site to adjacent areas include:

- Air dispersion of dust and particulates following mechanical disturbance
- Downward migration and leaching of contaminants through soil.
- Lateral migration via surface water run-off and stormwater flow through existing infrastructure.
- Lateral migration via groundwater towards nearby discharge zones.
- Transport of contaminants by human and/or mechanical disturbance.
- Physical contact with and ingestion/inhalation of contaminated media.
- Biomagnification along food chains.

4.3 Exposure Pathways

Man-made preferential pathways are to likely exist within the site, generally linked to areas of formerly disturbed natural ground present underneath the existing ground surface and unconsolidated fill materials. Fill materials and disturbed natural soil are anticipated to have a higher permeability than the underlying natural soils and/or bedrock.

4.4 Human Health – Direct Contact and Ingestion

Soil materials may be exposed during construction works or because of intrusive activities such as bulk earthwork activities across the site. It was therefore considered appropriate to assess whether a source of potential exposure from a contaminant of potential concern via the direct contact and/or ingestion pathway exists for current/future site users, site workers, visitors, and adjacent properties. It is considered to be of low risk for inhalation of free fibres, particulates or soil vapour, and via dermal absorption.

4.5 Human/Ecological Health – Stormwater Flow and Surface Water Run-off

Due to the topography of the site and proximity to Kemps Creek, it is inferred that the local groundwater flow is in a south westerly direction towards Kemps Creek, a freshwater ecological system. Also, as the future use of the site will primarily feature hardstand surfaces as part of the road upgrade, a moderate to high level of surface water run-off is expected to be captured within local stormwater systems which commonly discharge into local ecological communities.

Environmental investigation by ADE of areas adjacent to the road corridor (ADE 2022b and 2022c), recorded limited elevated concentrations of COPCs and concluded that concentrations present in both soil and surface

water did not pose a risk to future receptors. Therefore, ADE does not consider it necessary to examine the potential ecological risk associated with the site's local groundwater system and surface water run-off potential.

4.6 Potential Primary Receptors

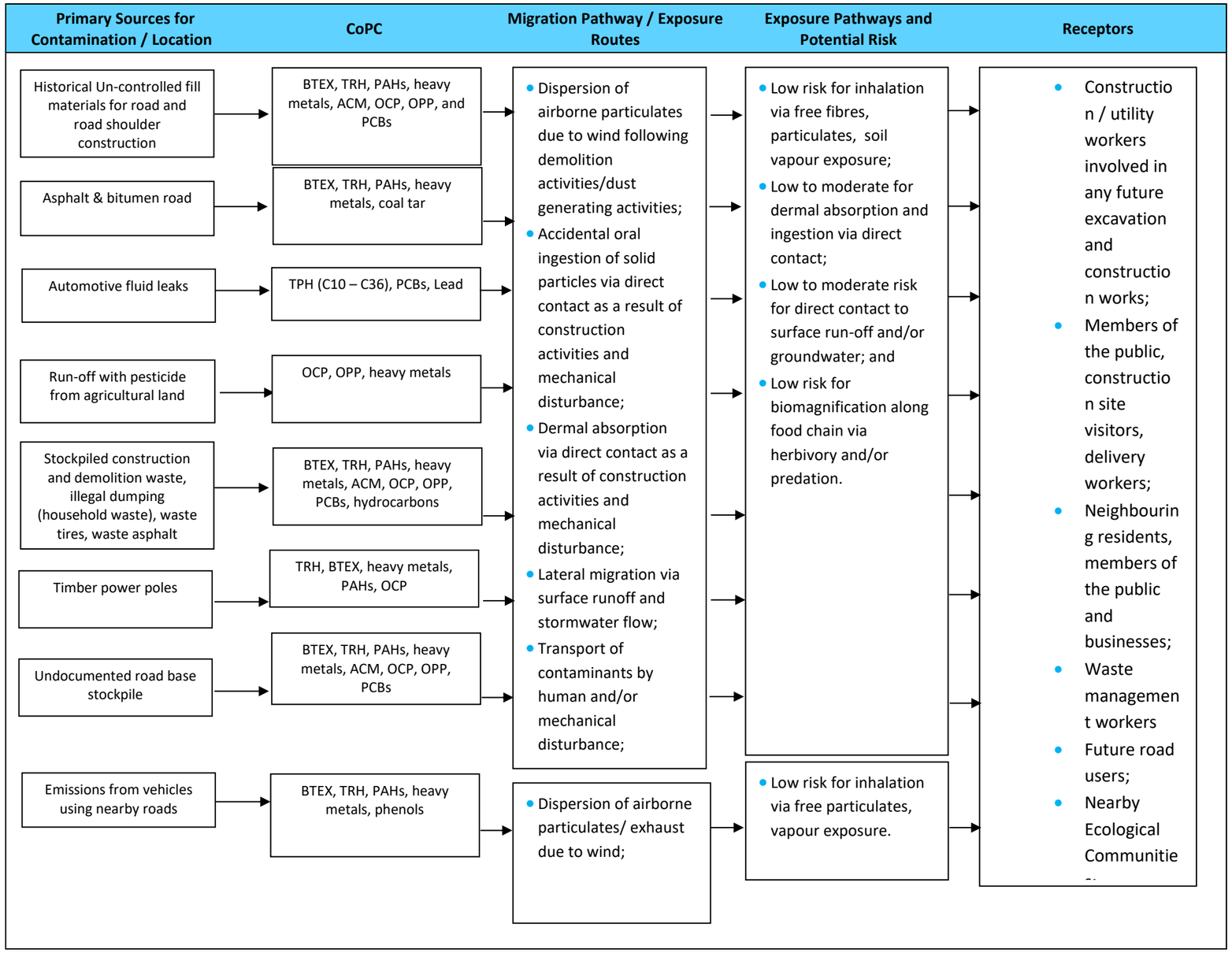
The potential primary receptors which may encounter contaminants via the transport mechanisms identified above:

- Future users of the site, particularly members of the public and any neighbouring residents.
- Future maintenance workers involved in subsurface excavations.
- Future construction workers during redevelopment of the site.
- Vegetation introduced as part of the development.
- Perched groundwater.
- Human and ecological receptors in nearby water bodies and ecological communities (i.e., local flora and fauna).

4.7 Preliminary Conceptual Site Contamination Model

The preliminary CSM depicted in Figure 2 shows the potential contamination sources, their exposure pathways and receptors.

Figure 2. Preliminary CSM - potential contaminant sources, pathways, risks and receptors



5 Data Quality Objectives

As stated in Section 18 Appendix B of Schedule B2 – Guideline on Site Characterisation in the ASC NEPM (NEPC 1999, amended 2013), the data quality objectives (DQO) process is a seven-step iterative planning approach used to define the type, quantity and quality of data needed to support decisions relating to the environmental condition of a site.

5.1 Step 1 – State the Problem

The objective is to determine the nature and extent of soil contamination at the site to assess if the site is suitable (or can be made suitable) for the proposed lateral extension of Abbotts and Mamre Road.

5.2 Step 2 – Identify the Decision

Based on a review of previous environmental investigations undertaken at the site, the following decisions need to be made:

- Is contamination present at the site above relevant investigation levels for commercial/industrial use?
- Is contamination present at the site that may present a risk to future inhabitants of the site, neighbouring properties, or surrounding receptors?
- Is the remediation of soil required to render the site suitable for the proposed commercial/industrial land use as a road corridor?

5.3 Step 3 – Identify Inputs to the Decision

To address the decision questions outlined in Step 2 of the DQOs (refer to **Section 5.2**), the following inputs to the decision have been identified:

- Information from previous site investigations.
- Observations made during the field works.
- Results of the soil samples collected during the investigation.
- Relevant regulatory guidelines.

5.4 Step 4 – Definite Boundaries of the Study

The investigation boundaries are presented in Table 6 below.

Table 6: Summary of the Study Boundaries

Spatial Boundaries	Following the completion of all fieldworks and sampling, the lateral boundaries of the site, were revised and clarified by the client. Consequently, a total of five test pits were outside the proposed boundaries of the site, and as such, the five test pits are no longer considered, applicable for the purposes of this investigation. The removal of these five test pits does not impact sampling density requirements. Despite changes to the spatial boundaries and sampling methodology, ADE still considers the dataset to be representative for the purposes of this investigation. The lateral boundaries of the site are limited to the proposed development area as shown in *Appendix I – Figures* and *Appendix IX – Other Supporting Documentation*. The vertical boundary for soil contamination within the site is limited to in-situ soils extending from the surface to approximately 1.8 m below ground level.
Temporal Boundaries	The investigation works were undertaken from the period of 23,24 and 27 March 2023.

Investigation Limit	The limit of the investigation extent was defined by previous investigations and the proposed development plans.
Constraints	Sampling locations were constrained by the presence of active agricultural farmland, overgrown tall grass and access to certain locations within the site. The investigation was limited to the areas of the site accessible at the time of the investigation.
Receptors of Concern	The potential receptors of concern are outlined in Section 4.6**.**

5.5 Step 5 – Develop a Decision Rule

The purpose of this step was to define the parameters of interest, specify action levels and combine the outputs of the previous DQO steps to develop a series of options if certain trigger events occur.

The key decision rules for this investigation were:

- Have the analytical data collected during this investigation met the DQI (see below)? If yes, then the data can be used to answer the decision rule below and the decision statements developed in Step 2. If no, then additional data/ assessment will be required.
- Are concentrations of CoPC's exceeding the investigation criteria defined in Section 7 (below)? If no, then the contamination does not pose an unacceptable risk. Where results exceed the adopted SAC, this may not necessarily indicate an unacceptable level of risk. Further risk assessment, and potentially additional investigations will be required to determine the potential for unacceptable impacts.

To assess the useability of the data for making decisions, the data has been assessed against a set of DQI, developed based on the following parameters:

- Precision: A quantitative measure of the variability (or reproducibility) of data.
- Accuracy: A quantitative measure of the closeness of reported data to the "true" value.
- Representativeness: The confidence (expressed qualitatively) that data are representative of each media.
- Completeness: A measure of the amount of useable data from a data collection activity.
- Comparability: The confidence (expressed qualitatively) that data may be equivalent for each sampling and analytical event.

5.6 Step 6 – Specify Acceptable Limits on Decision Errors

There are two sources of error for input to decisions:

- Sampling errors, which occur when the samples collected are not representative of the conditions within the investigation area; and
- Measurement errors, which occur during sample collection, handling, preparation, analysis and data reduction.

The null hypothesis for this study is:

- Contaminant concentrations within the soil at the site are above the adopted investigation levels.

These errors may lead to the following decision errors:

- Deciding that the risks posed by soil within the site are acceptable when these risks are not acceptable. The consequence of this error may be unacceptable impacts to human health, or the receiving environment; or

- Deciding that the risks posed by soil within the site are unacceptable when the risks are acceptable. The consequence of this error is that management actions will be undertaken to reduce risks that are not necessary.

The acceptable limit on decision errors is a 5% probability of a false negative (i.e., assessing that the average concentrations of COPC are less than the adopted soil investigation levels when they are greater than the investigation levels).

Where data sets are sufficiently populated, the 95% upper confidence limit (UCL) of the arithmetic mean will be used to calculate this probability. The 95% UCLs are to be less than the investigation level and standard deviation of the sample population shall be less than 50% of the investigation level.

5.7 Step 7 – Optimise the Design for Obtaining Data

The organisation of the data collection and analysis design for optimising the generation of data to satisfy the DQOs and the objective of the investigation has been achieved via the following procedures outlined in Table 7.

Table 7: Summary of procedures to be undertaken to optimise the design for obtaining data.

Pre-approved work plan	The sampling plan for the investigation at the site has been developed to assess the concentrations of contaminants present in soils at the site through the implementation of the components outlined within NEPM (2013), AS 4482.1 (2005) and AS/NZS 5667.1 (1998).
Compliance with EPA guidelines	• Use of appropriate techniques for the sampling, storage and transportation of samples • Implementation of NATA certified laboratory using analytical procedures as outlined in NEPM (2013) • Use of a secondary laboratory for split samples which is NATA certified for the required analyses

6 Sampling Plan and Methodology

6.1 Sampling Design Plan Strategy and Rationale

Before mobilisation to site, a job-specific SH&EWMS and relevant excavation permit documentation was developed and presented in a pre-start meeting before the commencement of works and signed on to by ADE staff and contractors. In accordance with Transport for NSW and Penrith City requirements, a road occupancy licence (ROL) and Road Opening Excavation Permit was obtained from relevant governing bodies prior to the commencement of intrusive activities.

Following pre-start and pre-work activities, the work area was established by incorporating the necessary traffic control protection measures to protect motorists, members of the public and workers. All traffic control measures were controlled by a licenced traffic controllers and installed as per a site-specific traffic guidance scheme (TGS).

Once the site was established, an experienced environmental consultant undertook a detailed site walkover to identify potential sources of contamination or areas of notable concern. Upon completion, the proposed test pit locations were marked out across the site based on accessibility and observations noted during the walkover. Before the commencement of intrusive activities, each proposed test pit location was 'cleared' for underground services by a qualified service locator via cable avoidance tool and ground-penetrating radar (GPR).

Due to changes with regards to the lateral limit of the investigation, five test pits (TP108,TP109,TP110,TP111,TP112) were removed from the scope of this investigation due to falling outside the proposed limit of works. As such, a total of 89 test pits form the basis for this investigation. Despite a reduction in test pits the sampling methodology, density and results are still considered representative for the purposes of this investigation.

6.2 Fieldwork Methodology

Table 8 outlines soil sampling investigation and methodology adopted during the course of the investigation.

Table 8. Summary of soil sampling investigation and methodology.

Activity	Detail/Comments
Underground service clearance	Before the commencement of any intrusive activities, appropriate consultation with a client representative was performed as part of due diligence practices which included a review of DBYD plans and site in-built plans.
Environmental test pits	A total of 89 test pits were completed using an 8-tonne excavator on 23,24 and 27 March 2023 to a maximum depth of 2.0 mBGL. Samples were typically collected at the soil surface followed by every half metre thereafter until the target depth was reached or upon encountering a new lithological stratum. Each soil sample was collected directly from the centre of the excavator bucket using hand trowels and disposable nitrile gloves to minimise the potential for cross-contamination between sampling points. Upon the completion of each test pit, any excess excavated soil materials were re-instated into the test pit and the ground conditions returned to their original condition and/or appropriately compacted (where required). Test pitting was only undertaken where the site conditions permitted. Hand trowels and other non-disposable tools were decontaminated using laboratory provided deionised water between each sampling point.
PFAS Sampling Methodology	Samples collected for PFAS analysis were collected using disposable nitrile gloves directly from the centre of the excavator bucket. Samples were typically collected by placing the soil materials directly into a laboratory prepared jar to avoid potential cross-contamination. Samples were stored in a cool, dry place and away from exposure to sunlight.
Asbestos quantification methodology	Asbestos quantification sampling was completed as per the NEPM (NEPC, 2013) and as outlined within the Western Australian Department of Health (WA DoH) Guidelines from the Assessment and Management of Asbestos Contaminated Sites in Western Australia (WA DoH, 2021). In summary, 10L of soil materials were collected, weighed and screened for the presence/absence of bonded asbestos using a 7mm x 7mm sieve or manually sieved over a colour-contrasting plastic sheet. If bonded asbestos fragments were identified/suspected during the screening process, they were collected and analysed to determine the percentage weight-by-weight concentration (% w/w) of asbestos for each sample. Fresh 500 mL soil samples were then collected within medium zip lock bags and sent for analysis of asbestos fines (AF) and fibrous asbestos (FA). Test pitting was only undertaken where the site conditions permitted.
Sample collection and transportation	A total of 62 primary soil samples and 3 fibrous cement sample were collected across the course of the investigation (excluding QA/QC samples). All samples were submitted to NATA accredited laboratories for analyses as per the recommended holding times on a standard (5-day) turnaround time.

	All samples were placed in laboratory prepared, suitable analyte containers involving sterile glass jars lined with Teflon lids for chemical analysis (excluding PFAS samples) and small zip lock bags for asbestos analysis. PFAS samples were placed within laboratory prepared high-density polyethylene (HDPE) jars and sealed with an HDPE lid. Each sample collected for chemical analysis was placed within a pre-chilled esky or cooler box with ice packs or equivalent to maintain samples at approximately 4^0C. Asbestos samples were stored in a large resin bag for storage. The original chain of custody (CoC) form was enclosed with the samples and dispatched to NATA accredited analytical laboratories.
Soil headspace screening	Following the collection of each sample, a PID with a 10.6 eV lamp, pre-calibrated with isobutylene gas at 100 ppm was used to screen the headspace gases of the collected samples to assess for the presence of VOCs. The PID headspace screening was conducted using a resealable zip-lock plastic bag, and the soil sample was agitated as the PID reading was taken inside the zip-lock plastic bag (the bag was appropriately sealed when inserting the PID).
Equipment decontamination	Dedicated disposable materials (e.g., nitrile gloves) were changed between each sampling point. All disposable sampling equipment/materials were collected and removed before leaving the site. All non-disposable sampling equipment was decontaminated by a three-stage decontamination process which included rinsing the piece of equipment with PFAS free denoised water, followed by a rinse of a PFAS free detergent (Liquinox) and a final rinse using laboratory provided PFAS free deionised water.
Documentation	A field observation log was kept by sampling personnel the intrusive investigation. Details recorded in the log included: • Test pit number • Soil profile notes • Sampling method • Sample identification • Sample description, and • Sample point measurements. A comprehensive master sample register was maintained. As samples were received, they were given a unique sequential number from the sample register into which details from the labels were entered. Before packing and dispatch of samples for analysis, a CoC form was completed (refer to *Appendix VI – Analytical Reports and Chain of Custody Documentation*). This form recorded details of the individual samples being dispatched and the type of analysis required for each sample.
Laboratory Submission	Samples were analysed by Sydney Laboratory Services (SLS) (primary laboratory), Eurofins (secondary laboratory). Refer to *Appendix VI – Analytical Reports and Chain of Custody Documentation* for the analytical methods used by the respective laboratories. • 62 primary soil samples were submitted to SLS for analysis of Heavy Metals, TRHs, PAHs, BTEX, VOCs, TBT, OCPs, OPPs, PFAS (Short-suite). • Three (3) fibre cement pieces were submitted to SLS for analysis of asbestos (presence/ absence) • 27 primary soil samples were submitted to SLS for analysis of asbestos (500 mL) • 3 blind replicate samples (QAQC) were submitted to SLS for analysis of Heavy Metals, TRHs, PAHs, BTEX, OCPs and OPPs. • 3 split replicate samples (QAQC) were submitted to Envirolab for analysis of Heavy Metals, TRHs, PAHs, BTEX, OCPs, OPPs.

7 Site Assessment Criteria

The soil assessment criteria specified in the following publications were employed for this DSI:

- Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites, Environmental Soil Quality Guidelines Background Ranges (ANZECC, 1992)
- Assessment of Site Contamination, National Environment Protection (Assessment of Site Contamination) Measure [NEPM], 2013 (NEPC, 2013)
- D.A Berkman. (1989) Field Geologist's Manual (D.A. Berkman, 1989)
- HEPA. (2020). The PFAS National Environmental Management Plan V2.0 (NEMP, 2020)
- New South Wales Environmental Protection Authority [NSW EPA]. (2014). Waste Classification Guidelines – Part 1: Classifying Waste (NSW EPA, 2014).

This report applies the relevant investigation levels to identify contaminants and/or areas of contamination that potentially pose a risk to human or environmental health.

7.1.1 Health Investigation Levels (HILs)

The NEPM (2013) guidelines describe four broad land-use settings to assess potential human health risks for a broad range of metals and organic substances. These four HIL categories are used to assess human health risk via all relevant pathways of exposure for the following broad land use categories:

- HIL-A – Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake, no poultry, also includes children's day-care centres, preschools and primary schools)
- HIL-B – Residential with minimal opportunities for soil access includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats
- HIL-C – Public open space such as parks, playgrounds, playing fields (e.g., ovals), secondary schools and footpaths. It does not include undeveloped public open space (such as urban bushland and reserves), which should be subject to a Site-specific assessment where appropriate, and
- HIL-D – Commercial/industrial such as shops, offices, factories and industrial sites.

Based on the available information, which includes the current land use as a public road which includes minor landscaping areas, the health investigation levels assigned for commercial/industrial land (HIL-D) has been adopted for screening purposes. A summary of the applicable HILs for soil is presented within **Table 9.**

Table 9: Summary of HILs-D in Soil, adapted from Table 1A(1), Schedule B1 of NEPM (2013).

Analyte	HILs D - Commercial/Industrial (mg/kg)
Arsenic (total)	3,000
Cadmium	900
Chromium (total)	3,600
Copper	240,000
Lead	1,500
Mercury (inorganic)	730
Nickel	6,000
Zinc	400,000
Carcinogenic PAHs (as BaP TEQ[1])	40
Total PAHs	4,000
Total PCBs	7

Analyte	HILs D - Commercial/Industrial (mg/kg)
DDT+DDE+DDD	3,600
Aldrin and Dieldrin	45
Chlordane	530
Endosulfan	2,000
Endrin	100
Heptachlor	50
Hexachlorobenzene	80
Methoxychlor	2,500
Chlorpyrifos	2,000

Notes to Table 9

1 – Toxicity equivalent quotient

7.1.2 Health Screening Levels (HSLs)

HSLs have been developed for selected petroleum compounds and fractions and are applicable to assessing human health risk via the inhalation and direct contact pathways. The HSLs depend on specific soil physicochemical properties, land use scenarios, and the characteristics of building structures.

As there are potential pathways of exposure concerning direct contact and ingestion for both construction workers and future users of the site, further tier 1 HSL screening criteria as per Friebel and Nadebaum's 'Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater, Part 2: Application Document, Technical report No. 10' (2011) has been adopted to include vapour risk to intrusive maintenance workers (Shallow Trench 0.0 to <1.0 m) and HSL levels for direct human contact outlined in **Table 10.**

Table 10: Site Assessment Criteria – HSLs for Soil Contamination

Analyte	Health Screening Levels (HSLs)	
	Soil HSLs for Vapour Intrusion - HSL-D (mg/kg) (0m to <1m)	Soil HSLs for Direct Contact - HSL-D (mg/kg)[1]
Benzene	3	430
Toluene	-	99,000
Ethylbenzene	-	27,000
Xylene	230	81,000
Naphthalene	-	11,000
TRH: C6 – C10(F1)[3]	260	26,000
TRH: C10 – C16 (F2)	-	20,000
TRH: C16 – C34(F3)	-	27,000
TRH: C34 – C40(F4)	-	38,000

Notes to Table 10

1- Human exposure settings based on intended land use have been established for HILs/HSLs (see Taylor and Langley 1998). HIL-D – Commercial/Industrial such as shops, offices, factories and industrial sites, was the land use setting adopted for this investigation;

2- Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their Toxic Equivalency Factor (TEFs) (potency relative to B[a]P). The B[a]P TEQ (Toxic Equivalency Quantity) is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TEF.

3- To obtain F1, subtract the sum of BTEX from the C_6-C_{10} fraction.

7.1.3 Ecological investigation levels and Ecological Screening Levels (EILs/ESLs)

The current land use features minor landscaped areas with open access to soil. To assess the impact on ecosystems, including site vegetation from contamination within the upper two metres of the subsurface environment, Schedule B1 of NEPM (*NEPC, 2013*) presents EILs and ESLs for different land uses. ESLs have been developed for TRH, BTEX and benzo(a)pyrene in soils and are applicable for assessing risk to terrestrial ecosystems. ESLs broadly apply to coarse- and fine-grained soils and various land uses. The ecological assessment criteria for a commercial/industrial land use context (mg/kg) are the adopted land use criteria for this investigation.

The methodology outlined in Schedule B1 NEPM (*NEPC, 2013*) was developed to protect soil processes, soil biota (flora and fauna), terrestrial invertebrates and vertebrates. Derivation of site specific EILs for metals (Cr, Cu, Ni & Zn) involves first establishing the appropriate added contaminant limit (ACL) values from Table 1B (1) – 1B (3) of Schedule B1 of the NEPM (*NEPC, 2013*). The tables consider the land use purposes and soil-specific properties such as pH and CEC to determine the CoPCs recommended ACL. Please note that the generic ACL for lead (Pb) is taken directly from Table 1(B)4 of Schedule B1 of the NEPM (*NEPC, 2013*). The ACL values are then added to the contaminant's respective ambient background concentration (ABC), determined via suitable reference data or baseline investigations, to produce the site-specific EIL (EIL = ABC + ACL).

No ABC data was available for the site. Therefore, for this investigation ADE has calculated the relevant ACL values and conservatively adopted them as the EIL. Additionally, the EIL criteria presented for arsenic (As), naphthalene and DDT are generic EIL values irrespective of their physiochemical properties sourced from Table 1(B)5 of Schedule B1 of the NEPM (*NEPC, 2013*).

Based on data obtained from a previous environmental assessment within the investigation area (ADE, 2022d), the site-specific soil properties used to calculate the EILs are shown in **Table 11.** ADE calculated the average of the values as an estimation of the true population mean and adopted these values in the derivation of the site-specific EILs. The calculated EIL is shown in **Table 12.** Please note that no clay content (%) data was obtained for the derivation of Cu and Zn ACL and therefore, the most conservative modelled clay content (%) was adopted.

Table 11. Soil Properties and calculation of EIL criteria.

Investigation No.	Sample ID	pH	Clay Content (%)	CEC (meq/100g)
ADE, 2022d	BH03(1.0-1.1)	5.9	25	9.5
	BH17(0.4-0.5)	5.1	25	8.7
	BH24(0.4-0.5)	8.5	25	9.7
	Average	**6.5**	**25[1]**	**9.3**

Notes to Table 11

1 - In the absence of site-specific soil clay content data, the most conservative modelled soil clay content for the site has been selected as sourced from the NSW Office of Environmental Heritage (eSpade).
2- Aged ACLs derived assuming a high traffic volume.
3 - For the derivation of copper ACLs a low organic content (1%) is assumed due to the physiochemical nature of the local lithology i.e., natural clays

Table 12. Site-specific EIL criteria.

Analyte	Commercial/Industrial Land Use (mg/kg)
Cr[2]	910
Cu[3]	290
Ni[5]	250
Zn[6]	710
As[1]	160
Pb[4]	1800
Naphthalene[1]	370
DDT[1]	640

Notes to Table 12

1- Generic EIL, as per Table 1B (5) of Schedule B1 of NEPM (2013).
2- Cr EIL calculated using clay content data using the ASC NEPM Toolbox and adopted as EIL, as per Section 2.5.10) of Schedule B1 of NEPM (2013).
3- Cu EIL calculated using CEC, pH, and clay content data using the ASC NEPM Toolbox and adopted as EIL, as per Section 2.5.10 Table 1B (2) of Schedule B1 of NEPM (2013).
4- Generic ACL for Pb conservatively adopted as EIL, as per Table 1B (4) of Schedule B1 of NEPM (2013).
5- Ni ACL calculated using CEC data using the ASC NEPM Toolbox and adopted as EIL, as per Section 2.5.10 of Schedule B1 of NEPM (2013).
6- Zn ACL calculated using pH and CEC data using the ASC NEPM Toolbox and adopted as EIL, as per Section 2.5.10of Schedule B1 of NEPM (2013).
6- Aged ACLs derived assuming a high traffic volume.

ESLs have been developed for TRH, BTEX and benzo(a)pyrene in soils and are applicable for assessing risk to terrestrial ecosystems. ESLs broadly apply to coarse- and fine-grained soils and various land uses. **Table 13** provides a summary of the adopted ESLs.

Table 13. Summary of ESLs in soil

Chemical	ESL – Commercial /Industrial Land Use (coarse grained soils) (mg/kg)
F1 C_6-C_{10}	215
F2 C_{10}-C_{16}	170
F3 >C_{16}-C_{34}	1700
F4 >C_{34}-C_{40}	3300
Benzene	75
Toluene	135
Ethylbenzene	165
Xylenes	180
Benzo(a)pyrene	0.7

Notes to Table 13
1- Values for fine-grained soil texture adopted for conservative purposes.
2- Generic ESLs for TPH fractions, F1-F4, BTEX and benzo(a)pyrene.

7.1.4 Management Limits

In accordance with Section 2.9 of Schedule B1 of the ASC NEPM, consideration of management limits for petroleum hydrocarbons will be undertaken to assess whether the reported soil conditions have the potential to pose a risk to buried infrastructure, or the formation of non-aqueous phase liquid (NAPL). Values for coarse grained soils are adopted as a conservative approach.

The adopted Management Limits from Table 1B (7), Schedule B1 of NEPM (2013) are shown in **Table 14.**

Table 14: Summary of Site Management Limits**.**

Chemical	Soil Type	Commercial/Industrial (mg/kg)
F1: TRH C6 – C10	Coarse	700
F2: TRH C10 – C16	Coarse	1 000
F3: TRH C16 – C34	Coarse	3 500
F4: TRH C34 – C40	Coarse	10 000

7.1.5 Asbestos in Soil

The HSL-D criteria outlined within the NEPM (NEPC,2013), based on the guidance provided in the WA DoH Guidelines (WA DoH, 2021), were adopted to assess the presence of asbestos in soil. These are shown in **Table 15.** The guidelines specify that the surface should be free of visible asbestos. The concentrations for bonded ACM concentrations in soil are based on the following equation which is presented in Schedule B1 of NEPM (2013):

$$\%\ w/w\ asbestos\ in\ soil = \frac{\%\ asbestos\ content \times bonded\ ACM\ (kg)}{Soil\ volume\ (L) \times soil\ density\ (kg/L)}$$

However, we are of the opinion that the actual soil volume in a 10L bucket varies considerably due to the presence of voids, particularly when assessing cohesive soils. Therefore, each bucket sample was weighed

using electronic scales, and the above equation was adjusted as follows (we note that the units have also been converted to grams):

$$\% \text{ w/w asbestos in soil} = \frac{\% \text{ asbestos content x bonded ACM (g)}}{\text{10L soil weight (g)}}$$

Table 15. Summary of adopted HSLs for asbestos in soil.

Asbestos Form	Health Screening Level (w/w)
	HSL D
Non-friable Asbestos	0.05 %
FA and AF	0.001%
All forms of asbestos	No visible asbestos on the soil surface

7.1.6 PFAS in soil

The HEPA *PFAS National Environmental Management Plan Version 2.0 (2020)* provides guidance on the management of PFAS impacted soils. The classes of soil criteria defined in the PFAS NEMP National Environmental Management Plan 2.0 (2020) for human HILs and EILs are presented in **Table 16.**

Table 16. Summary of the adopted assessment criteria for PFAS in soil.

Soil Criteria (Human Health)	PFOS + PFHxS (mg/kg)	PFOA (mg/kg)
Commercial/Industrial (HIL-D)	20	50
Soil Criteria (Ecological)	**PFOS (mg/kg)**	**PFOA (mg/kg)**
Ecological direct exposure	1	10
Ecological indirect exposure in areas of low accessible soil	0.14	NA

As the finished road upgrade will have a significant proportion of the land covered by hard surfaces and consumer use will be from within light vehicles, this project will use the guideline of 0.14 mg/kg for PFOS in soils as the default investigation level.

7.1.7 Aesthetics

NEPM 2013 requires that the aesthetic quality of accessible soils be considered even if analytical testing demonstrates that concentrations of COPCs are within the Site assessment criteria (SAC). It should be noted that there are no quantifiable guidelines in determining if soils are appropriately aesthetic. However, the NEPM 2013 does indicate that professional judgement concerning the quantity, type and distribution of foreign materials and odours concerning the specific land use should be employed.

The following scenarios (including but not limited to the following) would trigger further aesthetic assessment:

- Hydrocarbon sheen on surface water
- Anthropogenic soil staining, and
- Odorous soils, i.e., petroleum hydrocarbon odours or hydrogen sulfide in soil.

7.2 Statistical Treatment

Analytical results from the soil sampling program are statistically analysed to determine their applicability to the assessment and recommendation of remedial actions in the event of site assessment criteria (SAC) exceedances.

A contaminant concentration in soil will be deemed a non-exceedance if:

- The maximum concentration of all samples meets the specified acceptance criteria; or
- The 95% Upper Control Limit (UCL) is below the acceptance criteria with the following criteria:
  - The standard deviation of the results should be less than 50% of the relevant investigation or screening level; and
  - No individual exceedance should exceed 250% of the relevant investigation or screening level.

If the 95% UCL of the arithmetic mean of a contaminant concentration is above the acceptance criteria, then the soil will be classified as contaminated and will require further assessment, remediation, removal or management. If the 95% UCL of the arithmetic average concentrations is below the acceptance criteria, and no concentrations are at a hotspot level, slight elevations above the acceptance criteria may be considered to pose insignificant human health or environmental risk. The location will hence be considered a non-exceedance requiring no further assessment, remediation, removal or management. The statistical analysis for the assessment of ACM is not considered appropriate.

8 Results

8.1 Field Observations

The following field observations were noted across the course of the investigation:

- The site in its current form is being utilised as a public road and typically exhibits a medium to high traffic volume.
- Select areas within the road shoulder across the site have been artificially raised above the existing ground level to accommodate design specifications/requirements for road construction.
- No visual/olfactory indications of contamination including hydrocarbon odours/sheen or staining were noted during the inspection.
- Foreign materials including general waste debris, tyre waste and domestic rubbish was observed throughout the site during the inspection.

8.1.1 Ground Model

The typical soil stratigraphy encountered during the field investigation is detailed in **Table 17** (refer to *Appendix II – Photographs* and *Appendix V – Test Pit Logs*). The upper soil profile on-site is inconsistent with the regional soil landscape previously outlined, likely due to the historical use of uncontrolled fill.

Table 17. Ground Model.

Layer	Depth Range (m BGL)	Material Description[1]
FILL	GL-1.0	Coarse grain, light brown and orange gravelly SAND and gravelly CLAY with sub-angular to sub-rounded gravels and trace rootlets
Natural - Cohesive	GL - >1.5	Moderate plasticity yellow orange and brown CLAY
Natural – Weathered Shale	GL - > 0.7	Grey to brown moderately weathered SHALE

Notes to Table 17
1- Refer to *Appendix V – Test Pit Logs* for detailed lithological descriptions.

8.1.2 PID Field Screening

Each soil sample was screened for the presence of VOCs using a PID. The PID readings reported concentrations ranging from 0.0 ppm to 4.5 ppm. As the maximum recorded concentration was below the actionable criteria (15-20ppm), no further analysis was required (refer to *Appendix III –Results Tables).*

8.2 Analytical Results

Based on the analytical results collected from soil samples analysed across the investigation area, all samples returned concentrations below that of the adopted human health and ecological assessment criteria prescribed land-use criteria (HIL-D/HSL-D) (refer to *Appendix III –Results Tables* for individual sample results). The following sub-sections provide a brief discussion for each key analyte group when compared with the health and ecological assessment criteria outlined in the NEPM, 2013.

8.2.1 Soil Analytical Results

A summary of soil analytical results from each of the sixty-four (64) sample collected during the investigation are presented in *Appendix III –Results Tables.* Laboratory results indicate that all soil samples analysed recorded concentrations of COPC below site screening criteria for commercial/industrial land use.

8.2.2 Asbestos

A total of twenty-seven (27) 65 g soil samples and three suspected fibre cement samples (TP180_0.2.FC2, DSI_TP191_0-0.2_FC1, TP137_FC3_0-0.1) were collected throughout the course of the investigation and analysed as per AS4964-2004 (refer to *Appendix VI – Analytical Reports and Chain of Custody Documentation)*.

No soil samples positively identified the presence of asbestos containing materials. All three fibre cement fragments (DSI1_TP180_0.2.FC2, DSI1_TP191_0-0.2_FC1, and DSI1_TP137_FC3_0-0.1) were identified as containing chrysotile asbestos detected by polarised light microscopy including dispersion staining.

Should the client intend to beneficially re-use the fill materials, additional asbestos quantification assessment will need to be undertaken to determine the suitability of the fill with regards to asbestos. Any additional asbestos quantification assessment must conform with the Western Australian Department of Health Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia (WA DOH, 2009) and the NEPM (NEPC,2013).

9 Provisional Materials Analysis and Classification

9.1 Introduction

During the construction and earthworks involved in the proposed development, excavated material that cannot be beneficially re-used onsite, may be disposed off-site. To evaluate potential off-site disposal options, a preliminary material classification was conducted by comparing the results of the detailed site investigation to the NSW EPA Waste Classification Guidelines 2014. As final volumes of material to be removed from site has not been confirmed, they are not included within this preliminary classification.

9.2 Preliminary Waste Classification Assessment – Horizon A Fill Materials (0.0 – 1.0 mBGL)

The chemical and asbestos results obtained across the investigation were assessed against the NSW EPA Waste Classification Guidelines 2014; 2016, to provide off-site disposal options for the material.

It is noted the number of samples collected from the fill soil profile across the site may not be sufficient for a complete characterisation of the materials as under the current waste sampling framework. The classification provided for fill materials should be used for indicative purposes only and may need further characterisation for greater representation.

9.2.1 Comparison against the NSW EPA Waste Classification Guidelines 2014

Table 18. Step 1 to Step 7 of Waste Classification Guidelines Part 1 summarises Step 1 to Step 7 of the NSW EPA Waste Classification Guidelines: Part 1 – Classifying Waste (NSW EPA, 2014), which applies to the fill profile encountered across the site.

Table 18. Step 1 to Step 7 of Waste Classification Guidelines Part 1.

Step	Assessment
Step 1: Is the waste special waste? (Clinical and related waste, asbestos waste, waste tyres, and anything classified as special waste under an EPA gazettal notice)	☐ Yes ☒ No Three fibre cement fragments (TP180_FC1, TP191_FC2 and TP137_FC3) were identified as containing chrysotile asbestos detected by polarised light microscopy including dispersion staining. No AF/FA or respirable fibres were detected within any of the representative 500mL soil samples analysed.

<table>
<tr><th>Step</th><th colspan="5">Assessment</th></tr>
<tr><td></td><td colspan="5">Due to the limitations associated with site accessibility and the presence of extensive vegetation, the visual assessment was impeded within specific areas and therefore, PACM may still be present within select areas across the investigation area.</td></tr>
<tr><td>Step 2: Is the waste liquid waste?</td><td colspan="5">☐ Yes
☒ No</td></tr>
<tr><td>Step 3: Is the waste pre-classified?</td><td colspan="5">☐ Yes
☒ No</td></tr>
<tr><td>Step 4: Does the waste possess hazardous characteristics?</td><td colspan="5">☐ Yes
☒ No</td></tr>
<tr><td>Step 5: Chemical characterisation of the soil materials:</td><td colspan="5">Refer to Appendix III – Results Tables for a summary of the analytical results.

Summary of Results
A total of four (4) exceedances involving specific heavy metals (lead and nickel) and PAHs (benzo(a)pyrene) were recorded above the contaminant threshold 1 (CT1) but below the specific contaminant concentration (SCC) assigned for General Solid Waste or CT1/SCC1.All remaining analytes exhibited concentrations below the CT1 criteria. A summary of the exceedances is provided in Table 18.a.

Table 18.a Summary of Exceedances against the CT1/SCC1 criteria assigned for General Solid Waste.
<table>
<tr><th>Sample I.D.</th><th>Depth (m BGL)</th><th>Analyte</th><th>Criteria assigned for General Solid Waste (CT1/SCC1) (mg/kg)</th><th>Maximum Concentration (mg/kg)</th></tr>
<tr><td>TP133_0.1-0.2</td><td>0.1 – 0.2</td><td>Lead</td><td>100 / 1,500</td><td>190.1</td></tr>
<tr><td>TP149_0.1-0.2</td><td>0.1-0.2</td><td>Nickel</td><td>40 / 1,050</td><td>49.9</td></tr>
<tr><td>TP155_0-0.1</td><td>0.0 – 0.1</td><td>Benzo(a)pyrene</td><td>0.8 / 10</td><td>1.23</td></tr>
</table>
Outcomes of Statistical Evaluation
All primary fill samples underwent statistical evaluation of the dataset for lead and nickel. When sample concentrations were recorded below the PQL, the PQL was adopted for statistical purposes. The 95% UCL was calculated using ProUCL 5.1. All values derived for the specified analytes are articulated below:

• Nickel: 95% UCL (Students t-UCL) – 22.7 (STDEV 10.98)
• Lead: 95% UCL (Students t-UCL) – 45.84 (STDEV 27.09)

The statistical calculation for lead and nickel, as well as the singular outlier value for benzo(a)pyrene, returned acceptable outcomes for classification as ‘General Solid Waste’.

Further Consideration – Toxicity Characteristic Leaching Procedure (TCLP)
Due to lead and nickel concentrations above the CT1 threshold and below the SCC1 threshold assigned for ‘General Solid Waste’, further consideration can be considered to undertake TCLP analysis in an attempt to retain the chemical classification as ‘General Solid Waste’.</td></tr>
<tr><td>Step 6: Is the waste putrescible or non-putrescible?</td><td colspan="2">☐ Putrescible
☒ Non-putrescible</td><td colspan="3">Non-putrescible materials typically do not:
• readily decay under standard conditions
• emit offensive odours
• attract vermin or other vectors (such as flies, birds, and rodents).</td></tr>
</table>

Step	Assessment
Preliminary Waste classification conclusion:	Based on the data and evidence collected over the course of the investigation, it is the opinion of ADE that: Asbestos ☒ was ☐ was not observed within any of the in-situ soil materials inspected or detected within any representative 500mL samples collected or observed at any location onsite Paint chips, indicators of PASS, hydrocarbon odours / staining ☐ were ☒ were not observed in the materials inspected, and The concentrations of Heavy Metals, TRHs, BTEX, PAHs, PCBs, OCPs, OPPs, PFAS and in the samples collected from within the subject soil materials ☒ indicatively meet ☐ indicatively do not/meet the NSW EPA (2014) criteria assigned for **'General Solid Waste'.** **The provided waste classification assessment should be used for indicative purposes only and does not offer a full waste classification of the material. Further sampling and analysis maybe required in the future to maintain compliance with the sampling and waste legislative framework.**

9.2.2 Approved NSW EPA Resource Recovery Framework

Due to the location of the material and the inferred nature of future excavation works, further consideration may be considered for employing further assessment to assess for compliance against NSW EPA approved resource recovery framework. Benefits of considering resource recovery framework alternatives include the avoidance of the NSW EPA waste levy, potentially reducing disposal costs and contributing to a circular economy and project sustainability goals.

9.3 Preliminary VENM Compliance Assessment – Natural Materials (0-1.8 m BGL)

Following a site inspection, the natural materials encountered onsite were deemed to be consistent with the local geology. No visual or olfactory indicators of contamination observed within the natural materials during the sampling investigation. **Table 19** provides a preliminary assessment of the material and observations against the requirements for validating material as VENM, in accordance with the POEO Act 1997.

The Protection of the Environment Operations Act 1997 (POEO Act) defines virgin excavated natural material (VENM) as:

> *'natural material (such as clay, gravel, sand, soil, or rock fines):*
>
> *(a) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining, or agricultural activities and*
>
> *(b) that does not contain any sulfidic ores or soils or any other waste*
>
> *and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved for the time being pursuant to an EPA Gazettal notice.'*

Table 19. Requirements for 'VENM' as per the POEO Act 1997.

Criteria	Assessment

Is the material naturally occurring such as clay, gravel, sand, soil, or rock fines?	☒ Yes ☐ No
Has the material been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining, or agricultural activities?	☒ Yes ☐ No
Does the material contain any sulfidic ores, or any other waste?	☐ Yes ☒ No
Does the material meet the chemical requirements to be considered VENM? Refer to *Appendix III – Results Tables* and discussion below. Out of 17 samples analysed, six (6) samples exceeded ANZECC (1992) background values for mercury, and one sample exceeded D.A Berkman (1989) background values for arsenic.	☐ Yes ☒ No
Additional Comments: The number of samples collected for natural material classification across the site may not be sufficient for a complete characterisation of the materials as VENM. The classification provided for the natural materials is limited to the number of natural samples analysed and may need further characterisation for greater representation.	

9.4 Preliminary Classification and Conclusions

Table 20 provides a summary of the preliminary materials classification analysis undertaken throughout the investigation.

Table 20 Preliminary Materials Classification

Soil Profile	Depth Range (m BGL)	Matrix Description	Area of site	Preliminary Classification
FILL - Engineered Materials / Reworked Natural Soils	0.0 – 1.8 m	Gravelly SAND and Gravelly CLAY	Majority of Site	**General Solid Waste**
			Fragment of fibre cement at TP180, TP191, TP137	**Special Waste - Asbestos**
NATURAL - Residual Clays	0.3 – 1.7	Silty Clay / Clay	Areas around TP143, TP149, TP167, TP173, TP181 and TP191	**General Solid Waste – subject to additional analysis**
			Remainder of site	**VENM**

Please note that the classifications provided are noted to be preliminary and should be used for indicative purposes only. Additional sampling will likely be required to achieve a representative sampling distribution for the characterisation of natural soil materials.

10 Data Quality Assessment

To carry out the assessment of the data acquired during the investigation, the US EPA Guidelines including, but not limited to, the *'Guidance on Assessing Quality Systems'* (2003) and *'Guidance on Systematic Planning Using the Data Quality Objectives Process'* (2006) were used.

The guidelines provide a general strategy for assessing data quality criteria and performance specifications for decision making. The following is the output from most of the steps of the data quality assessment (DQA) Process provided in the guidelines. Quality control reports from the laboratories for sample analyses were reviewed. The review included an assessment of blank, duplicate, control, and spiked samples. The review of the QA/QC program was conducted in accordance with NSW EPA recommendations.

10.1 Data Review

Quality control reports from the laboratories subcontracted for sample analyses were reviewed. Laboratory blank samples, duplicate samples, control samples, spiked samples and method blanks were evaluated (refer to *Appendix IV – QA/QC Output*).

This review was conducted in accordance with the items recommended by the NSW EPA for inclusion in the consultants' reports. Some additional recommendations from the US EPA methodology, as referred to by AS 4482.1, were also followed.

Following the QA/QC assessment, the validity of the results is determined based on the assessment criteria adopted, with the results expressed as either valid or invalid data (acceptable or unacceptable). The laboratory QA/QC sections can be found in their corresponding internal laboratory QA/QC reports (refer to *Appendix VI – Analytical Reports and Chain of Custody Documentation*).

10.1.1 Chain of Custody

Australian Standard AS 4482.1 defines the chain-of-custody documentation as the link in the transfer of samples between the time of collection and arrival at the laboratory.

The COC utilised by ADE included the items recommended by the Standard:

- The person transferred the samples;
- The person who received the samples;
- Date the samples were collected;
- Date the samples were received at the laboratory; and
- Contact name and details for the client.

Copies of the COCs completed during the course of this investigation are provided in in *Appendix VI – Analytical Reports and Chain of Custody Documentation*.

10.1.2 Record of Holding Times

The objective is to ascertain the validity of the analytical results based on meeting the holding time for the samples from the time of collection to the time of analysis.
All samples collected over the course of the investigation were submitted within one day of the initial sampling event. As such, the holding times of all samples to the final submission to the laboratories used (SLS and Envirolab) meet the recommended holding time criteria, with all samples analysed within 7 days from the time of collection (refer to *Appendix VI Analytical Reports and Chain of Custody Documentation*).

10.2 Field Equipment Calibration

Field equipment requiring calibration included the use of a photo-ionisation detector (PID). The PID was calibrated by an external qualified technician before the sampling events and further calibrated onsite i.e., bump tested (as required) by a suitably qualified environmental consultant (refer to *Appendix VII – Equipment Calibration Certificates* for the attached calibration certificate).

10.3 Laboratory Analytical Methodology and Accreditation

All chemical analysis was undertaken by NATA accredited laboratories using US EPA approved methodology. Refer to *Appendix VI – Analytical Reports and Chain of Custody Documentation* for the details of the adopted laboratory analytical methods and their respective accreditations. The laboratory methodologies and the respective accreditations of SLS and Eurofins were deemed suitable for the required analyses.

10.4 Detection Limits / Practical Quantification Limits

The smallest amount of a substance that can be detected by the laboratories used – SLS and Envirolab, above the background method noise in a procedure and within a stated confidence level is referred as detection limit.

Current practice identifies several detection limits including the following: (1) the instrument detection limit (IDL), (2) the lower-level detection limit (LLD), the method detection limit (MDL) and the practical quantitation limit (LOR).

The relationship among these levels is approximately IDL: LLD: MDL: LOR = 1: 2: 4: 10. Refer to SLS and Envirolab for the list of LORs provided by their respective laboratories. When dilution of a sample is involved in the sample preparation, the method detection limit is adjusted by the dilution factor.

10.5 Field QA/QC

A summary of the QA/QC samples collected during field works is provided in Table 21.

Table 21. Summary of Field QA/QC Samples.

Field QA/QC	Frequency	Sample Details	Field QA/QC Frequency Achieved?
Blind replicate samples	1 per 20 samples	Three blind replicate samples were collected during the investigation: • DSI_BR1 is an intra-laboratory replicate of the primary sample of DSI_TP185_0-0.2. • DSI_BR2 is an intra-laboratory replicate of the primary sample DSI1.TP165_0.3-0.4 • DSI_BR3 is an intra-laboratory replicate of the primary sample DSI1.TP121_0.3-0.4	Yes[1]
Split Replicate samples	1 per 20 samples	Three split replicate samples were collected during the investigation: • DSI_SR1 is an intra-laboratory replicate of the primary sample of DSI_185_0-0.2. • DSI_SR2 is an intra-laboratory replicate of the primary sample DSI1.TP165_0.3-0.4 • DSI_SR3 is an intra-laboratory replicate of the primary sample DSI1.TP121_0.3-0.4	

Notes to Table 21
1- Rinsate samples were collected at a reduced density based on the prescribed fieldwork methodology.

10.5.1 Blind and Split Replicate Samples

Australian Standard 4428.1 and the NEPM (2013) specifies the typical Relative Percentage Data (RPD) values for replicate samples to be below 30%. If both samples' values are less than the practical quantification limit (PQL), the RPD is not calculated. Valid values are sample concentrations that fall within the control limits of 0-30% described above. Invalid values are concentrations that are outside of the control limits.

- Three intra-laboratory blind replicate samples were collected to determine the variability of the sampling process. The replicate sample was collected simultaneously from the same source and under identical conditions as the primary samples.
- The blind replicate samples showed 230 valid values and 4 invalid values.
- Three inter-laboratory split replicate samples were collected to measure the variability between the laboratory analysis process. The variability assessment showed 212 valid values and 7 invalid values.

10.6 Laboratory QA/QC

10.6.1 Laboratory Duplicates

Duplicate sample determinations were provided by the laboratories to demonstrate acceptable method precision at the time of analysis.

Duplicates are generally analysed at a frequency of 1 for every 10 samples. Australian Standard 4482.1 provides an acceptable range of the RPD values up to 50% for quality control samples, depending on the magnitude of results in comparison to the LOR.
Analysis of laboratory duplicates showed 2,184 valid values and nil invalid values.

10.6.2 Laboratory Blanks

- The assessment of blank analysis results was conducted to determine the existence and magnitude of contamination resulting from laboratory activities.
- In the blanks analysed by the laboratory there was 717 valid values and 40 invalid values.

10.6.3 Laboratory Spikes and Surrogates

- Laboratory limits of approximately 70-130% for inorganics/metals and 60-140% for organics were used to validate matrix spikes and laboratory surrogate samples.
- Analysis of spikes and surrogates showed 102 valid values and 13 invalid values.

10.6.4 Laboratory Control Samples

- Laboratory limit of approximately 70-130% for inorganics/metals and 60-140% for organics were used to validate laboratory control samples.
- Analysis of the laboratory control samples showed 416 valid values and 14 invalid values.

10.7 QA / QC Data Evaluation

The qualitative and quantitative descriptors, DQIs were used in interpreting the degree of acceptability of the data acquired in the course of the investigation. The principle DQIs are precision, accuracy, representativeness, comparability, and completeness referred to by the acronym PARCC. Precision and accuracy are quantitative measures, representativeness and comparability are qualitative, and completeness is a combination of both quantitative and qualitative measures. Table 22 summarises the DQO reconciliation.

Table 22. Summary of DQO Reconciliation.

QA/QC Item	DQO Criteria	Valid Data	Invalid Data	Completeness	Conclusion
Laboratory duplicate samples	95%	2,184	0	100.00%	Acceptable
Laboratory blank samples	100%	717	40	94.43%	Fail
Laboratory spike/surrogate recoveries	95%	102	13	87.26%	Fail
Laboratory Control samples	95%	416	14	96.64	Acceptable
Blind Replicate Samples	75%	230	4	98.27%	Acceptable
Split Replicate Samples	75%	212	7	96.70%	Acceptable
Overall Completeness:	**95%**	**3861**	**78**	**97.98%**	**Acceptable**

Notes to Table 22
*LOR – Limits of Reporting

Following a review of the data, the recorded 'invalid' results can be attributed to the difficulties in obtaining a homogeneous sample from heterogeneous matrices. The ratio of the valid data to the total number of the analyses conducted in the QA/QC program yielded 97.98%, thereby meeting the DQO criteria of 95% completeness.

11 Revised conceptual site model

Following the completion of the current investigation, a revised CSM was developed in accordance with the findings of the field investigation works and NEPM Schedule B2 – NEPM (2013), to assess the plausible connections between potential contamination sources and the receptors.

The potential contamination sources identified during the provisional CSM included the suspected use of historical cut and fill practices associated with the road shoulder construction, the presence of suspected hazardous materials including asbestos and coal tar, regular automotive vehicular activity (i.e., emissions, fuel leaks etc), run-off associated with pesticide/herbicide applications, 'fly-tipping' of household waste, timber power poles and the presence of unknown stockpiled soil and waste materials.

Based on the collected analytical data, it can be inferred that there is currently a 'low' risk associated with the chemical contamination status of the soil materials within the site. Due to identification of asbestos fibre cement fragments, asbestos remains a key COPC. Further targeted asbestos related assessments may be considered within areas which initially had poor accessibility at the time of the investigation or within areas of high concern. In addition, tyres and general waste were observed sporadically throughout the site. However, the remediation action required for these potential sources of contamination is isolated to the physical locations where tyres were observed.

Table 23. Revised Conceptual Site Model.

Potential Contamination Source	COPCs	Potential Exposure Pathways and Transport mechanisms	Potential Receptors	SPR Link Comments	Pathway Complete or incomplete?
Historical un-controlled fill practices	Heavy metals, TRHs, BTEXN, PAHs, OCPs/OPPs, PAHs, Asbestos	• Dispersion airborne particulates due to wind following disturbance. • Downward migration and leaching of contaminants through soil. • Lateral migration via surface water run-off. • Lateral migration via groundwater towards nearby surface water discharge zones. • Transport of contaminants by human and/or mechanical disturbance. • Air dispersion of dust. • Physical contact with contaminated media; and • Biomagnification along food chains.	• Workers involved with construction work. • Future site users	Three fragments of fibre cement asbestos identified. No asbestos fibres observed within soil. No soil exceedances of contaminants of concern.	Incomplete – Moderate risk. Potentially complete during earthworks. construction, future site.
Presence of unknown waste including stockpiles and tyre waste				Visual observations noted the presence of tyre waste sporadically throughout the site.	
Run-off associated with herbicide/pesticide application from agricultural land	Heavy metals, OCP/OPPs			No detections of OCPs/OPPs were identified within any of samples collected across the investigation.	Complete – low risk.
'Fly-tipping' of household waste products from nearby motorists	Heavy metals, BTEXN, PAHs, TRHs/TPHs			Consistent indications of fly-tipping were noted during the site inspection. Activity is inferred to continue with the continued operation as a public road.	Incomplete – low risk. Activity is likely to continue for the duration of the land-use as a public road.
Timber Power Poles	Heavy metals, PCBs, Asbestos			Timber power poles were noted across the site. Upon decommissioning, there is potential for cross-contamination of the surrounding soils to occur.	Incomplete – Low -risk. Potentially complete following the construction of the site.
Presence of Hazardous Material (i.e., asbestos and coal tar)	PAHs, Asbestos, Coal Tar	• Transport of contaminants by human and/or mechanical disturbance. • Inhalation of airborne contaminants. • Air dispersion of dust.	• Low to moderate risk for inhalation with free fibres. • Low risk of vapour inhalation from organic contaminants or free particulates .	Three fragments of fibre cement asbestos identified. No asbestos fibres observed within soil. Isolated finds may still be present. Coal tar may be present within asphalt/bitumen matrices.	Incomplete – Low to moderate risk. Potentially complete following the construction of the site.
High Automotive Traffic Activity (i.e., fuel leaks, emissions etc)				No visual/olfactory indicators of hydrocarbon odours of leaks were noted during the site inspection.	Incomplete – Low risk. Activity is likely to continue for the duration of the land-use as a public road.

12 Conclusions and Recommendations

Based on the findings of the site investigations the following is concluded and recommended:

12.1 Conclusions

The detailed site investigation was undertaken with a pre-defined scope and lateral and vertical investigation limits which vary across the site, on the depth of natural material encountered. The following conclusions were derived using the data collated from the investigation.

12.1.1 Soil Chemical Assessment

All primary soil samples analysed returned chemical concentrations below that of the adopted SAC HIL/HSL D. PFAS analysis was conducted on selected samples across the investigation, with no detections reported.

Based on the analytical results collected from soil samples analysed across the site, the soils are considered chemically suitable for the ongoing land-use as commercial/industrial land (HIL C/HIL D) or a public road.

12.1.2 Asbestos Assessment

Three fragments of fibre cement were encountered (TP180_0.2.FC2, TP191_0-0.2_FC1, and TP137_FC3_0-0.1) were positively identified as containing asbestos containing materials (Chrysotile). A total of 27 soil samples were collected throughout the course of the investigation, but no asbestos was encountered within the soil samples analysed.

12.1.3 Aesthetic assessment

Foreign materials including general waste debris and domestic rubbish was observed throughout the site during the investigation. Professional judgement should be employed when considering the aesthetic quality of soil materials and care should be taken to ensure the surface of soils are free of rubbish and debris.

12.1.4 Provisional Materials Analysis and Classification Assessment

The chemical and asbestos results obtained across the investigation were assessed against the NSW EPA Waste Classification Guidelines 2014; 2016, to provide indicative off-site disposal options for the material. The classification provided for fill materials should be used for indicative purposes only and may need further characterisation for greater representation. In summary:

- Of the 47 Horizon A material samples analysed, a total of 3 exceedances were identified against the CT1 criteria (2 for heavy metals and 1 for PAHs) assigned for ‘General Solid Waste’. All concentrations remained below the SCC1 threshold.
- Pending the outcomes of the TCLP analysis, the samples collected from the Horizon A fill materials (Topsoil/Engineered fill) maybe considered suitable as ‘General Solid Waste’.
- Seven (7) samples collected from the natural soil materials returned concentrations above the adopted geological background ranges (ANZECC, 2000; D.A. Berkman, 1989). Further delineation sampling maybe considered suitable to provide a Virgin Excavated Natural Material (VENM) classification for materials outside of these exceedances.

Due to the limited dataset and sampling undertaken, further sampling maybe required to produce a final classification assessment for the material. The provided assessment should be used for indicative purposes only.

12.1.5 Limitations, uncertainties, and assumptions

Due to site limitations including accessibility, safety issues and the presence of existing infrastructure including the services, the following are considered to be limitations, uncertainties and/or assumptions relevant to the investigation:

- The distribution of the completed sampling locations was primarily defined by spatial and safety restrictions present on-site. Based on the achieved distribution and sampling density, certain areas of the site have limited data to fully assess the nature and extent of potential contamination
- The lateral limit and vertical limit of the investigation is defined within Section 5. Contamination may be present within areas which have not been adequately assessed or at depths greater than the prescribed investigation limit.
- Due to the high traffic volume and the presence of high vegetation, certain areas would not be fully assessed or accessed and therefore, contamination may still be present within specific areas across the site.

12.1.6 Prescribed Land-Use Suitability

Considering the conclusions outlined above, ADE considers that the site is suitable for the prescribed land use as commercial/industrial land (HIL/HSL-D) with minor landscaped areas. The site is not considered to warrant the requirement of a remediation action plan (RAP). All unexpected finds must be managed in accordance with construction sub-management plans including asbestos management plans.

12.2 Recommendations

- Due to the current land-use of the site, ADE recommends that construction sub-management plans i.e., AMP, CEMPs are produced to manage unexpected finds encountered during the construction phase.
- As required per the NEPM, 2013, professional judgement should be employed when considering the aesthetic quality of soil materials and care should be taken to ensure the surface of soils are free of rubbish and debris.
- Further consideration should be given to employing approved NSW EPA resource recovery framework to achieve a cost-effective solution to future waste management and contribute further to circular economy and sustainability practices.

13 Limitations and Disclaimer

This report has been prepared for the exclusive use of the client and is limited to the scope of the work agreed in the terms and conditions of contract (including assumptions, limitations and qualifications, circumstances, and constraints). ADE has relied upon the accuracy of information and data provided to it by the client and others.

ADE has used a degree of care and skill ordinarily exercised in similar investigations by reputable members of the environmental industry in Australia. No other warranty, expressed or implied, is made or intended. No one section or part of a section, of this report should be taken as giving an overall idea of this report. Each section must be read in conjunction with the whole of this report, including its appendixes and attachments. The report is an integral document and must be read in its entirety.

To the fullest extent permitted by law, ADE does not accept or assume responsibility to any third party (other than the client) for the investigative work, the report or the opinions given.

The scope of work conducted, and report herein may not meet the specific needs (of which ADE is not aware) of third parties. ADE cannot be held liable for third party reliance on this document. Any third party who relies upon this report does so at its own risk.

The subsurface environment can present substantial uncertainty due to it complex heterogeneity. The conclusions presented in this report are based on limited investigation of conditions at specific sampling locations chosen to be as representative as possible under the given circumstances. However, it is possible that this investigation may not have encountered all areas of contamination at the site due to the limited sampling and testing program undertaken.

The material subject to classification pertains only to the site and subject area outlined within the report and must be consistent with the waste description reported. If there are any unexpected finds that are not consistent with this classification, ADE must be notified immediately.

ADE does not verify the accuracy or completeness of, or adopt as its own, the information or data supplied by others and excludes all liability with respect to such information and data. To the extent that conditions differ from assumptions set out in the report, and to the extent that information provided to ADE is inaccurate or incomplete or has changed since it was provided to ADE, the opinions expressed in this report may not be valid and should be reviewed.

ADE's professional opinions are based upon its professional judgement, experience, training, and results from analytical data. In some cases, further testing and analysis may be required, thus producing different results and/or opinions. ADE has limited its investigation to the scope agreed upon with its client.

This Limitation and Disclaimer must accompany every copy of this report.

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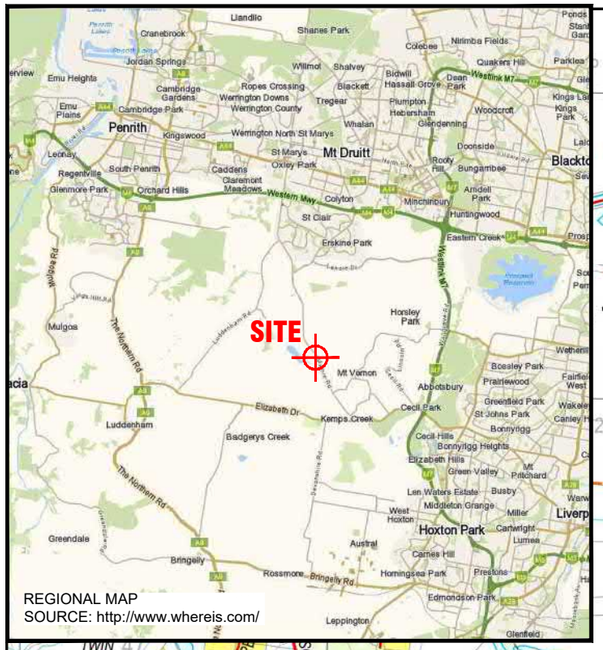
Appendix I – Figures



CONTINUE TO FIGURE 2

SITE

NOTE:
ALL LOCATIONS ARE APPROXIMATE DIMENSIONS IN METRES.
IMAGE SOURCE: NSW GOVERNMENT SPATIAL SERVICES, TOPOGRAPHIC MAP,9030-2N, PROSPECT, 2017.

revision	no.	description	drawn	approved	date
	A	FIRST ISSUE	MC	aAH	13/04/23

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SCALE 1:20000@A3 METRES

drawn	MC
approved	AH
date	13/04/2023
scale	AS SHOWN
original size	A3

client: AT&L

project: DETAILED SITE INVESTIGATION
ABBOTTS ROAD AND ALDINGTON ROAD UPGRADE
KEMPS CREEKS, NSW

title: LOCALITY MAP - ABBOTTS ROAD AND ALDINGTON ROAD

project no: 23.0120_DSI1 | figure no: FIGURE 1 | rev: A

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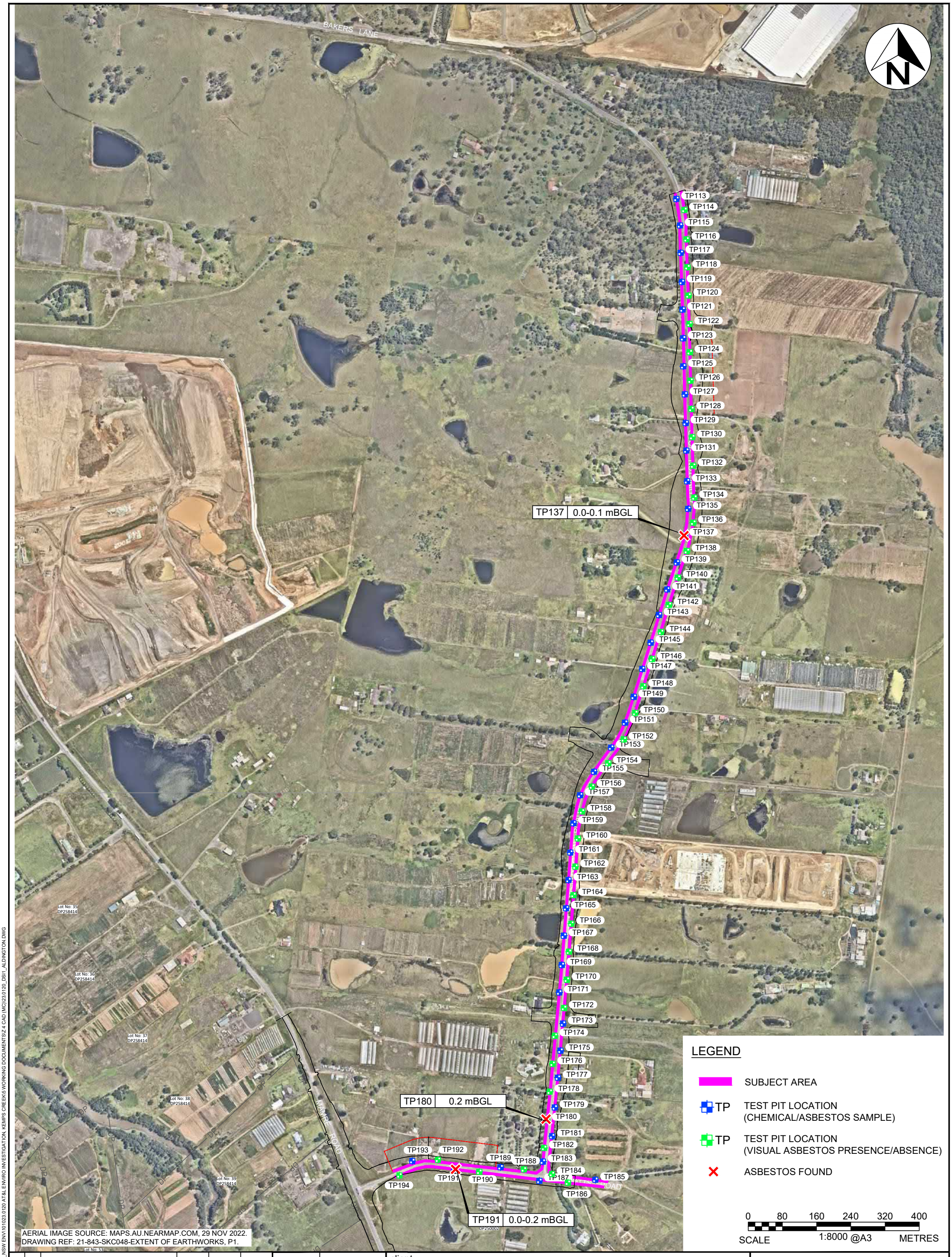
PLOT DATE: 8/05/2023 3:20:45 PM DWG FILE: V:_NSW ENV\101023.0120 AT&L ENVIRO INVESTIGATION, KEMPS CREEKS WORKING DOCUMENTS\Z 4 CAD (MC)\23.0120_DSI1_ALDINGTON.DWG



revision	no.	description	drawn	approved	date
	A	FIRST ISSUE	MC	AH	13/04/23

drawn	MC
approved	AH
date	13/04/2023
scale	AS SHOWN
original size	A3

client: AT&L

project: DETAILED SITE INVESTIGATION
ABBOTTS ROAD AND ALDINGTON ROAD UPGRADE
KEMPS CREEKS, NSW

title: TEST PIT LOCATION - ALDINGTON ROAD

project no: 23.0120_DSI1 | figure no: FIGURE 2 | rev: A

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TP133	0.1-0.2
LEAD	190.1

TP143	0.8-0.9
MERCURY	0.31

TP149	0.1-0.2	0.4-0.5
NICKEL	49.9	-
ARSENIC	-	66.3

TP155	0.0-0.1
B(a)P	1.23

TP167	0.4-0.5
MERCURY	0.11

TP173	0.5-0.7
MERCURY	0.15

TP175	0.7-0.9
MERCURY	0.13

TP181	0.5-0.6
MERCURY	0.13

TP191	0.5-0.6
MERCURY	0.18

LEGEND

SUBJECT AREA

TP TEST PIT LOCATION (CHEMICAL/ASBESTOS SAMPLE)

TP TEST PIT LOCATION (VISUAL ASBESTOS PRESENCE/ABSENCE)

SAMPLE ID	DEPTH (metres)
CHEMICAL	CONCENTRATION (mg/kg)

HORIZON A WASTE CRITERIA
SOIL CONTAMINATION ABOVE NSW 2014 GENERAL SOLID WASTE CT1 (NO LEACHING) (mg/kg)

HORIZON B VENM CRITERIA
SOIL CONTAMINATION ABOVE ANZECC (1992) BACKGROUND RANGES (VENM) (mg/kg)

HORIZON B VENM CRITERIA
SOIL CONTAMINATION ABOVE BERKMAN (1989) BACKGROUND RANGES (VENM) (mg/kg)

0 80 160 240 320 400
SCALE 1:8000 @A3 METRES

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM, 29 NOV 2022.
DRAWING REF: 21-843-SKC048-EXTENT OF EARTHWORKS, P1.

revision no.	description	drawn	approved	date
A	FIRST ISSUE	MC	AH	13/04/23

drawn	MC
approved	AH
date	13/04/2023
scale	AS SHOWN
original size	A3

client: AT&L

project: DETAILED SITE INVESTIGATION
ABBOTTS ROAD AND ALDINGTON ROAD UPGRADE
KEMPS CREEKS, NSW

title: SOIL ANALYTICAL RESULTS - MARCH 2023

project no: 23.0120_DSI1 | figure no: FIGURE 3 | rev: A

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Appendix II – Photographs

Photograph 1 – Site context photo (facing southeast) showing northern extent of Aldington Road Site. Date Taken: 27/03/2023.

Photograph 2 – Site context photo (facing east) showing southwestern extent of Abbotts Road. Date Taken: 27/03/2023.

Photograph 3 – Cross section of TP123 showing transition from darker FILL materials to the upper extent of the natural cohesive horizon. Date Taken: 24/03/2023.

Photograph 4 – TP125 showing transition from gravely sand to silty clay. Date Taken: 24/03/2023.

Photograph 5 – TP153. Surficial soils contained 1.23 mg/kg Benzo(a)pyrene. A strong organic odour was noted within the first 0.3 mBGL. Date Taken: 24/03/2023.

Photograph 6 – TP129. Representative image 1 of 2 showing excavated encountered natural shale. Date Taken 24/03/2023.

Photograph 7 – TP129. Representative image 2 of 2 showing in-situ encountered natural shale. Date Taken 24/03/2023.

Photograph 8– Soil matrix (Fill) encountered in TP152. Date Taken: 24/03/2023.

Photograph 9 – Soil matrices encountered in TP196. Date Taken: 24/03/2023.

Photograph 10 – Litter encountered in the vicinity of TP196. Date Taken: 24/03/2023.

Photograph 11 – Natural cohesive soils encountered in TP190. Date Taken: 23/03/2023.

Photograph 12 –TP121. Date Taken: 27/03/2023.

Photograph 13 – Natural cohesive soils encountered in TP119. Date Taken: 27/03/2023.

Photograph 14 – TP122 showing transition from Fill material to top of natural cohesive soils. Date Taken: 24/03/2023.

Photograph 15 – TP126. Date Taken: 24/03/2023.

Photograph 16 – Fill materials encountered within TP128. Date Taken: 24/03/2023.

Photograph 17 –TP130. Date Taken: 24/03/2023.

Photograph 18 –TP131. Date Taken: 24/03/2023.

Photograph 19 – TP132. Date Taken: 24/03/2023.

Photograph 20 – TP134. Date Taken: 24/03/2023.

Photograph 21 – TP135. Date Taken: 23/03/2023.

Photograph 22– TP144. Date Taken: 24/03/2023.

Photograph 23 – TP145. Date Taken: 24/03/2023.

Photograph 24 – TP146. Date Taken: 24/03/2023.

Photograph 25 – TP149. Date Taken: 24/03/2023.

Photograph 26 – TP151. Date Taken: 24/03/2023.

Photograph 27 – TP170. Date Taken: 23/03/2023.

Photograph 28 – Asbestos fragment identified within TP191. Date Taken: 23/03/2023.

Appendix III – Results Tables

	Asbestos					Physical	Metals								BTEX								
	Asbestos (Presence/Absence)	Weight of Fibre Cement	10L Soil Weights	Non-Friable Asbestos	Asbestos Fines + Friable Asbestos	Moisture Content	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Naphthalene (VOC)	Total BTEX
	Y/N	g	kg	% w/w	% w/w	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.1	4	0.3	1	1	1	0.1	1	1	0.2	0.5	1	2	1	1	1	2
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																						
PFAS NEMP 2020 Ecological direct exposure																						
PFAS NEMP 2020 Ecological indirect exposure																						
PFAS NEMP 2020 Industrial/ commercial (HIL D)																						
NEPM 2013 Table 1A(3) Comm/ind D Soil HSL for Vapour Intrusion, Sand															3 | 3 | 3 | 3					230		
Site Specific Ecological Investigation Level							160		910	290	1800		250	710								370
Site Specific Ecological Screening Level															75	135	165			180		
NEPM 2013 Table 1A(1) HILs Comm/ind D Soil				0.05	0.001		3,000	900		240,000	1,500	730	6,000	400,000								

Field ID	Date	Matrix Description	Sample Type	Parent Sample																					
DSI1_TP113_0.2-0.3	27 Mar 2023	FILL: Gravelly SAND	Normal		N	-	11.31	NAD	NAD	13.4	6.0	<0.30	26.3	47.0	31.4	<0.10	34.3	119.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI1_TP113_0.5-0.6	27 Mar 2023	NATURAL: CLAY	Normal		-	-	-	-	-	16.9	7.2	<0.30	36.0	40.9	27.9	<0.10	30.7	81.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI1.TP115_0.2-0.3	27 Mar 2023	FILL: Gravelly SAND	Normal		N	-	10.50	NAD	NAD	12.9	5.7	<0.30	30.5	38.5	29.7	<0.10	35.0	96.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI1.TP117_0-0.1	27 Mar 2023	FILL: Gravelly SAND	Normal		N	-	10.95	NAD	NAD	15.0	7.3	<0.30	28.0	21.3	26.0	<0.10	21.9	47.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI1.TP119 0.1-0.3	27 Mar 2023	FILL: Gravelly SAND	Normal		N	-	11.89	NAD	NAD	13.8	15.4	<0.30	23.7	25.3	21.9	<0.10	4.9	20.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI1.TP119 0.6-0.7	27 Mar 2023	NATURAL: CLAY	Normal		-	-	-	-	-	13.4	12.1	<0.30	33.9	21.2	36.3	<0.10	19.5	31.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI1.TP121_0.3-0.4	27 Mar 2023	FILL: Gravelly SAND	Normal		N	-	11.45	NAD	NAD	16.8	8.8	<0.30	32.5	30.9	21.3	<0.10	29.2	65.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP123_0.3-0.4	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	10.75	NAD	NAD	12.3	9.7	<0.30	17.7	22.5	13.9	<0.10	17.1	42.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP125_0-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	11.64	NAD	NAD	44.0	9.6	<0.30	24.3	35.9	24.3	<0.10	32.5	96.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP125_1.4-1.5	24 Mar 2023	NATURAL: CLAY	Normal		-	-	-	-	-	19.9	16.2	<0.30	35.6	30.6	22.3	<0.10	17.6	40.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP125_1.8-1.9	28 Mar 2023	NATURAL: CLAY	Normal		-	-	-	-	-	15.8	26.2	<0.30	26.1	18.1	9.3	<0.10	9.0	33.0	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP127_0.2-0.3	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	10.52	NAD	NAD	21.3	9.7	<0.30	37.6	28.5	14.5	<0.10	37.4	86.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI TP127 0.5-0.6	24 Mar 2023	NATURAL: SHALE	Normal		-	-	-	-	-	21.2	17.6	<0.30	60.4	41.6	17.6	<0.10	54.6	124.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI TP129 0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	10.86	NAD	NAD	16.2	11.0	<0.30	22.3	30.7	26.0	<0.10	28.4	72.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP131_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	11.32	NAD	NAD	15.4	6.7	<0.30	17.8	24.2	13.2	<0.10	16.8	42.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP133_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	12.36	NAD	NAD	15.0	10.0	<0.30	26.5	30.1	190.1	<0.10	14.8	142.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP133_0.9-1.0	24 Mar 2023	FILL: Gravelly SAND	Normal			-	-	-	-	10.3	11.5	<0.30	27.1	36.0	17.3	<0.10	35.0	80.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP135_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	10.86	NAD	NAD	28.2	7.5	<0.30	42.3	25.6	13.5	<0.10	37.2	68.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP135_0.5-0.6	24 Mar 2023	NATURAL: CLAY	Normal		-	-	-	-	-	17.6	<5.0	<0.30	15.5	32.3	31.6	<0.10	17.1	73.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP137_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	12.34	NAD	NAD	17.1	<5.0	<0.30	13.8	18.1	19.7	<0.10	7.6	59.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP137 FC3 0-0.1	24 Mar 2023	Grey Fibre Cement			Y	19	12.34	0.002	-																
DSI TP139 0.2-0.3	24 Mar 2023	NATURAL: SHALE	Normal		N	-	12.67	NAD	NAD	12.5	8.1	<0.30	12.3	24.9	10.2	<0.10	5.6	25.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP141_0.2-0.3	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	9.98	NAD	NAD	19.6	<5.0	<0.30	5.1	15.7	9.1	<0.10	1.9	8.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP143_0.3-0.4	24 Mar 2023	FILL: Silty SAND	Normal		N	-	10.26	NAD	NAD	9.5	12.2	<0.30	46.2	38.1	26.9	<0.10	74.0	94.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP143_0.8-0.9	24 Mar 2023	NATURAL: SHALE	Normal			-	-	-	-	11.3	18.5	<0.30	18.9	37.7	14.3	0.31	17.1	84.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP145_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	10.84	NAD	NAD	17.9	<5.0	<0.30	17.2	34.8	36.1	<0.10	19.0	78.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP147_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	12.45	NAD	NAD	15.3	12.0	<0.30	22.9	28.1	15.8	<0.10	26.1	63.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP149_0.1-0.2	24 Mar 2023	FILL: Clayey Gravelly CLAY	Normal		N	-	11.56	NAD	NAD	27.2	6.5	<0.30	19.8	67.7	39.6	<0.10	49.9	128.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI TP149 0.4-0.5	24 Mar 2023	NATURAL: CLAY	Normal			-	-	-	-	18.0	66.3	<0.30	6.7	46.0	14.0	<0.10	6.5	76.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI TP151 0-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	11.23	NAD	NAD	13.3	18.1	<0.30	15.3	30.4	23.5	0.12	12.3	59.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP151_0.3-0.4	24 Mar 2023	NATURAL: CLAY	Normal			-	-	-	-	15.7	22.7	<0.30	27.8	21.8	35.3	<0.10	6.5	34.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP153_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	12.32	NAD	NAD	14.2	<5.0	<0.30	12.0	24.7	46.5	<0.10	8.7	103.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP155_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	11.52	NAD	NAD	15.3	30.0	<0.30	19.1	27.7	24.0	<0.10	12.2	160.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP157_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	12.21	NAD	NAD	12.6	<5.0	<0.30	14.2	27.3	10.9	<0.10	9.6	51.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP157_0.6-0.7	24 Mar 2023	NATURAL: CLAY	Normal			-	-	-	-	15.9	14.1	<0.30	13.7	34.0	18.7	<0.10	13.1	84.8	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP159_0.3-0.4	24 Mar 2023	FILL: Gravelly CLAY	Normal		N	-	10.65	NAD	NAD	11.5	14.5	<0.30	15.0	26.6	21.9	<0.10	15.5	60.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI TP159 0.6-0.7	24 Mar 2023	NATURAL: CLAY	Normal			-	-	-	-	15.2	18.5	<0.30	19.5	25.8	21.3	<0.10	15.9	63.7	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI TP161 0.1-0.2	24 Mar 2023	FILL: Gravelly CLAY	Normal		N	-	10.34	NAD	NAD	6.4	<5.0	<0.30	4.6	<0.3	13.7	<0.10	4.0	28.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP163_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	11.01	NAD	NAD	8.6	<5.0	<0.30	18.4	31.1	29.5	<0.10	29.6	94.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP165_0.3-0.4	24 Mar 2023	FILL: Gravelly SAND	Normal		N	-	10.95	NAD	NAD	7.4	9.2	<0.30	18.4	21.2	28.7	<0.10	22.0	87.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP165_1.0-1.1	24 Mar 2023	FILL: Gravelly SAND	Normal			-	-	-	-	8.2	7.1	<0.30	21.9	26.7	22.9	<0.10	25.3	73.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP165_1.6-1.7	24 Mar 2023	FILL: Gravelly SAND	Normal			-	-	-	-	11.6	<5.0	<0.30	6.9	52.7	98.4	<0.10	26.2	110.7	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP167_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		N	-	10.90	NAD	NAD	15.0	5.4	<0.30	15.3	33.2	33.2	0.14	21.2	81.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP167_0.4-0.5	23 Mar 2023	FILL: Gravelly SAND	Normal			-	-	-	-	14.2	15.9	<0.30	12.9	34.1	17.9	0.11	16.8	77.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI TP169 0-0.2	23 Mar 2023	NATURAL: CLAY	Normal		N	-	10.60	NAD	NAD	10.9	10.3	<0.30	8.4	31.1	16.2	0.15	32.1	103.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP171_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		N	-	11.31	NAD	NAD	9.8	8.2	<0.30	12.3	38.2	22.1	0.11	18.3	66.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP173_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		N	-	11.10	NAD	NAD	14.4	7.5	<0.30	20.3	38.7	48.5	0.12	23.6	73.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP173_0.5-0.7	23 Mar 2023	NATURAL: CLAY	Normal			-	-	-	-	15.7	<5.0	<0.30	7.9	16.3	11.0	0.15	3.2	17.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP175_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		N	-	10.60	NAD	NAD	6.4	5.2	<0.30	20.2	25.5	37.1	0.12	22.0	53.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP175_0.4-0.6	23 Mar 2023	FILL: Silty LOAM	Normal			-	-	-	-	12.1	10.2	<0.30	32.7	7.1	27.2	0.21	6.1	18.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP175_0.7-0.9	23 Mar 2023	NATURAL: CLAY	Normal			-	-	-	-	15.2	13.4	<0.30	20.5	14.0	17.1	0.13	7.7	21.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP177_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		N	-	12.20	NAD	NAD	8.5	5.4	<0.30	27.7	25.8	23.2	0.10	24.3	57.8	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI TP179 0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		N	-	11.40	NAD	NAD	9.9	<5.0	<0.30	13.2	27.0	17.6	0.29	11.1	62.0	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI TP180 0.2 FC2	23 Mar 2023	Grey Fibre Cement	Normal		Y	19	11.40	0.002	-																
DSI_TP181_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		N	-	11.70	NAD	NAD	6.8	<5.0	<0.30	10.4	13.6	19.8	0.23	11.1	48.0	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP181_0.5-0.6	23 Mar 2023	NATURAL: CLAY	Normal			-	-	-	-	11.8	<5.0	<0.30	1.9	17.8	5.1	0.13	3.9	14.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP183_0-0.2	23 Mar 2023	FILL: Gravelly CLAY	Normal		N	-	12.15	NAD	NAD	19.7	7.8	<0.30	16.8	33.3	57.3	0.21	23.7	90.8	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP185_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		N	-	11.61	NAD	NAD	7.6	<5.0	<0.30	34.1	18.0	15.7	0.55	39.5	52.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP187_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		N	-	10.14	NAD	NAD	15.3	10.6	<0.30	12.9	21.0	20.5	0.10	10.7	35.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP189_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		N	-	10.10	NAD	NAD	11.2	<5.0	<0.30	10.8	26.6	13.3	0.16	7.3	39.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI TP191 0.2-0.3	23 Mar 2023	FILL: Clayey Gravelly SAND	Normal		N	-	11.32	NAD	NAD	5.1	<5.0	<0.30	16.3	40.8	23.5	0.12	18.3	50.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI TP191 0-0.2 FC1	23 Mar 2023	Grey Fibre Cement	Normal		Y	16	11.32	0.001	-																
DSI_TP191_0.5-0.6	23 Mar 2023	NATURAL: CLAY	Normal			-	-	-	-	13.6	7.2	<0.30	15.3	38.3	15.5	0.18	17.0	75.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP193_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		N	-	12.70	NAD	NAD	5.1	6.0	<0.30	37.7	24.0	45.2	0.16	21.1	55.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP195_0-0.2	23 Mar 2023	FILL: Gravelly CLAY	Normal			-	-	-	-	13.0	5.5	<0.30	24.0	24.0	40.8	0.16	22.1	63.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_BR1	23 Mar 2023	FILL: Gravelly SAND	Field_D	2023007644	-	-	-	-	-	7.1	5.4	<0.30	31.5	22.1	18.4	0.12	36.7	53.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_SR1	23 Mar 2023	FILL: Gravelly SAND	Interlab_D	2023007644	-	-	-	-	-	6.4	-	<0.4	29	24	12	<0.1	29	33	<0.2	<0.5	<1	<2	<1	<2	<1	-
DSI_BR2	24 Mar 2023	FILL: Gravelly SAND	Field_D	2023007915	-	-	-	-	-	7.7	9.2	<0.30	15.2	17.3	23.3	<0.10	16.7	48.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI-SR2	24 Mar 2023	FILL: Gravelly SAND	Interlab_D	2023007915	-	-	-	-	-	7.6	<5	<0.4	12	12	11	<0.1	9	22	<0.2	<0.5	<1	<2	<1	<2	<1	-
DSI1. BR3	27 Mar 2023	FILL: Gravelly SAND	Field_D	2023008100	-	-	-	-	-	17.2	<5.0	<0.30	25.7	24.6	15.7	<0.10	20.2	38.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI1_SR3	28 Mar 2023	FILL: Gravelly SAND	Interlab_D	2023008100	-	-	-	-	-	18	8	<0.4	29	34	17	<0.1	22	51	<0.2	<0.5	<1	<2	<1	<2	<1	-

Statistics

Number of Results	47	4	44	4	47	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	3	65
Number of Detects	3	4	47	3	0	68	49	0	68	67	68	24	68	68	0	0	0	0	0	0	0	0	0
Minimum Concentration	-	-	-	-	-	5.1	<4	<0.3	1.9	<5	5.1	0.1	1.9	8.6	<0.2	<0.5	<1	<2	<1	<1	<1	<1	<2
Maximum Concentration	-	-	-	-	-	44	66.3	<0.4	60.4	67.7	190.1	0.55	74	160.9	<0.5	<0.5	<1	<2	<1	<2	<1	<1	<2
Standard Deviation *	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95% UCL (Student's-t) *						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* A Non Detect Multiplier of 0.5 has been applied.

Environmental Standards

NEPM, NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil
HEPA, January 2020, PFAS NEMP 2020 Ecological direct exposure
HEPA, January 2020, PFAS NEMP 2020 Ecological indirect exposure
HEPA, January 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
2013, NEPM 2013 Table 1A(3) Comm/ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil

	TPH					TRH							PAH																	
	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	C10-C16 Fraction (F2)	C10-C16 Fraction (F2 minus Naphthalene)	C16-C34 Fraction (F3)	C34-C40 Fraction (F4)	C10-C40 Fraction (Sum)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(b+j)+k)fluoranthene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ (zero)	Benzo(a)pyrene TEQ (half)	PAHs (Sum of positives)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	25	50	100	100	50	25	25	50	50	100	100	50	0.1	0.1	0.1	0.2	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3		0.05
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil						700		1,000		3,500	10,000																			
PFAS NEMP 2020 Ecological direct exposure																														
PFAS NEMP 2020 Ecological indirect exposure																														
PFAS NEMP 2020 Industrial/ commercial (HIL D)																														
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand							260 | 370 | 630																							
Site Specific Ecological Investigation Level																										370				
Site Specific Ecological Screening Level							215	170	170	1,700	3,300							1.4												
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																												40		
Field ID	**Date**	**Matrix Description**	**Sample Type**	**Parent Sample**																												
DSI1_TP113_0.2-0.3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI1_TP113_0.5-0.6	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI1_TP115_0.2-0.3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI1_TP117_0-0.1	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI1_TP119_0.1-0.3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI1_TP119_0.6-0.7	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI1_TP121_0.3-0.4	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP123_0.3-0.4	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP125_0-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP125_1.4-1.5	**24 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP125_1.8-1.9	**28 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP127_0.2-0.3	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI TP127_0.5-0.6	**24 Mar 2023**	**NATURAL: SHALE**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI TP129_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP131_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP133_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	0.32	0.57	0.45	<0.30	0.37	<0.30	0.85	<0.30	0.33	<0.30	0.98	0.73	3.87
DSI_TP133_0.9-1.0	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP135_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP135_0.5-0.6	**24 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP137_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP137_FC3_0-0.1	**24 Mar 2023**	**Grey Fibre Cement**																													
DSI_TP139_0.2-0.3	**24 Mar 2023**	**NATURAL: SHALE**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP141_0.2-0.3	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP143_0.3-0.4	**24 Mar 2023**	**FILL: Silty SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP143_0.8-0.9	**24 Mar 2023**	**NATURAL: SHALE**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP145_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		100	100	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP147_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP149_0.1-0.2	**24 Mar 2023**	**FILL: Clayey Gravelly CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI TP149_0.4-0.5	**24 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI TP151_0-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP151_0.3-0.4	**24 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP153_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP155_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	114	114	<35	<35	<50	-	145	<100	145	<0.30	<0.30	<0.30	2.24	0.86	1.23	0.76	1.15	<0.30	0.53	<0.30	1.16	<0.30	1.04	1.83	8.97
DSI_TP157_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	104	104	<35	<35	<50	-	<100	136	136	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP157_0.6-0.7	**24 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP159_0.3-0.4	**24 Mar 2023**	**FILL: Gravelly CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP159_0.6-0.7	**24 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP161_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.40	<0.30	<0.30	<0.30	<0.30	0.36	0.35	0.76
DSI_TP163_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP165_0.3-0.4	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP165_1.0-1.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP165_1.6-1.7	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP167_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP167_0.4-0.5	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI TP169_0-0.2	**23 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP171_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP173_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP173_0.5-0.7	**23 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP175_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP175_0.4-0.6	**23 Mar 2023**	**FILL: Silty LOAM**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP175_0.7-0.9	**23 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP177_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI TP179_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP180_0.2_FC2	**23 Mar 2023**	**Grey Fibre Cement**	**Normal**																											
DSI_TP181_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP181_0.5-0.6	**23 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP183_0-0.2	**23 Mar 2023**	**FILL: Gravelly CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP185_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP187_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP189_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI TP191_0.2-0.3	**23 Mar 2023**	**FILL: Clayey Gravelly SAND**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	120	120	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.73	<0.30	<0.30	<0.30	<0.30	0.69	0.35	1.42
DSI TP191_0-0.2_FC1	**23 Mar 2023**	**Grey Fibre Cement**	**Normal**																											
DSI_TP191_0.5-0.6	**23 Mar 2023**	**NATURAL: CLAY**	**Normal**		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP193_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<25	<50	<100	121	121	<35	<35	<50	-	<100	148	148	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP195_0-0.2	**23 Mar 2023**	**FILL: Gravelly CLAY**	**Normal**		<25	<50	<100	116	116	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_BR1	**23 Mar 2023**	**FILL: Gravelly SAND**	**Field_D**	**2023007644**	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_SR1	**23 Mar 2023**	**FILL: Gravelly SAND**	**Interlab_D**	**2023007644**	<25	<50	<100	<100	<100	<35	<35	<50	<50	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
DSI_BR2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Field_D**	**2023007915**	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI-SR2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Interlab_D**	**2023007915**	<25	<50	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.2	0.3	0.06	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.5	0.79
DSI1_BR3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Field_D**	**2023008100**	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI1_SR3	**28 Mar 2023**	**FILL: Gravelly SAND**	**Interlab_D**	**2023008100**	<25	<50	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
Statistics																														
Number of Results					68	68	68	68	68	68	68	68	3	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68
Number of Detects					0	0	0	5	5	0	0	0	0	1	3	4	0	0	0	2	3	3	1	3	0	4	0	2	0	0	5	65	5
Minimum Concentration					<25	<50	<100	100	<50	<25	<25	<50	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.35	<0.05
Maximum Concentration					<25	<50	<100	121	121	<35	<35	<50	<50	145	148	148	<0.3	<0.3	<0.3	2.24	0.86	1.23	0.76	1.15	<0.3	0.85	<0.3	1.16	<0.3	<0.3	1.04	1.83	8.97
Standard Deviation *					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95% UCL (Student's-t) *					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* A Non Detect Multiplier of 0.5 has been applied.

Environmental Standards

NEPM, NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil
HEPA, January 2020, PFAS NEMP 2020 Ecological direct exposure
HEPA, January 2020, PFAS NEMP 2020 Ecological indirect exposure
HEPA, January 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil

	Organochlorine Pesticides																						
	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	g-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																					
PFAS NEMP 2020 Ecological direct exposure																					
PFAS NEMP 2020 Ecological indirect exposure																					
PFAS NEMP 2020 Industrial/ commercial (HIL D)																					
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																					
Site Specific Ecological Investigation Level									640												
Site Specific Ecological Screening Level																					
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil										3,600					100				50		2,500
Field ID	**Date**	**Matrix Description**	**Sample Type**	**Parent Sample**																			
DSI1_TP113_0.2-0.3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI1_TP113_0.5-0.6	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI1_TP115_0.2-0.3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI1_TP117_0-0.1	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI1_TP119_0.1-0.3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI1_TP119_0.6-0.7	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI1_TP121_0.3-0.4	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP123_0.3-0.4	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP125_0-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP125_1.4-1.5	**24 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP125_1.8-1.9	**28 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP127_0.2-0.3	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI TP127_0.5-0.6	**24 Mar 2023**	**NATURAL: SHALE**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI TP129_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP131_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP133_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP133_0.9-1.0	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP135_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP135_0.5-0.6	**24 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP137_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP137_FC3_0-0.1	**24 Mar 2023**	**Grey Fibre Cement**																					
DSI_TP139_0.2-0.3	**24 Mar 2023**	**NATURAL: SHALE**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP141_0.2-0.3	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP143_0.3-0.4	**24 Mar 2023**	**FILL: Silty SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP143_0.8-0.9	**24 Mar 2023**	**NATURAL: SHALE**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP145_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP147_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP149_0.1-0.2	**24 Mar 2023**	**FILL: Clayey Gravelly CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI TP149_0.4-0.5	**24 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP151_0-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP151_0.3-0.4	**24 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP153_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP155_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP157_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP157_0.6-0.7	**24 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP159_0.3-0.4	**24 Mar 2023**	**FILL: Gravelly CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI TP159_0.6-0.7	**24 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP161_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP163_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP165_0.3-0.4	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP165_1.0-1.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP165_1.6-1.7	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP167_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP167_0.4-0.5	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI TP169_0-0.2	**23 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP171_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP173_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP173_0.5-0.7	**23 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP175_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP175_0.4-0.6	**23 Mar 2023**	**FILL: Silty LOAM**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP175_0.7-0.9	**23 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP177_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI TP179_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI TP180_0.2_FC2	**23 Mar 2023**	**Grey Fibre Cement**	**Normal**																				
DSI_TP181_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP181_0.5-0.6	**23 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP183_0-0.2	**23 Mar 2023**	**FILL: Gravelly CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP185_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP187_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP189_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI TP191_0.2-0.3	**23 Mar 2023**	**FILL: Clayey Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI TP191_0-0.2_FC1	**23 Mar 2023**	**Grey Fibre Cement**	**Normal**																				
DSI_TP191_0.5-0.6	**23 Mar 2023**	**NATURAL: CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP193_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP195_0-0.2	**23 Mar 2023**	**FILL: Gravelly CLAY**	**Normal**		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_BR1	**23 Mar 2023**	**FILL: Gravelly SAND**	**Field_D**	**2023007644**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_SR1	**23 Mar 2023**	**FILL: Gravelly SAND**	**Interlab_D**	**2023007644**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
DSI_BR2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Field_D**	**2023007915**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI-SR2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Interlab_D**	**2023007915**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	-	<0.1	<0.1	<0.1
DSI1_BR3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Field_D**	**2023008100**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10
DSI1_SR3	**28 Mar 2023**	**FILL: Gravelly SAND**	**Interlab_D**	**2023008100**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.1	-	<0.1	<0.1	<0.1
Statistics																							
Number of Results					68	68	68	68	68	68	68	68	68	3	68	68	68	68	68	68	65	68	68	68	68
Number of Detects					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum Concentration					<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Standard Deviation *					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95% UCL (Student's-t) *					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* A Non Detect Multiplier of 0.5 has been applied.

Environmental Standards

NEPM, NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil
HEPA, January 2020, PFAS NEMP 2020 Ecological direct exposure
HEPA, January 2020, PFAS NEMP 2020 Ecological indirect exposure
HEPA, January 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil

Table A: Analytical Results Table_NEPM 2013 and NEMP 2020

Field ID	Date	Matrix Description	Sample Type	Parent Sample	Azinophos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Tribuphos	Diazinon	Dichlorvos	Dimethoate	Ethion	Ethoprop	Fenitrothion	Malathion	Methyl parathion	Parathion	Ronnel
					Organophosphorous Pesticides														
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																			
PFAS NEMP 2020 Ecological direct exposure																			
PFAS NEMP 2020 Ecological indirect exposure																			
PFAS NEMP 2020 Industrial/ commercial (HIL D)																			
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																			
Site Specific Ecological Investigation Level																			
Site Specific Ecological Screening Level																			
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil							2,000												
DSI1.TP113_0.2-0.3	27 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI1.TP113_0.5-0.6	27 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI1.TP115_0.2-0.3	27 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI1.TP117_0-0.1	27 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI1.TP119_0.1-0.3	27 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI1.TP119_0.6-0.7	27 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI1.TP121_0.3-0.4	27 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP123_0.3-0.4	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP125_0-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP125_1.4-1.5	24 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP125_1.8-1.9	28 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP127_0.2-0.3	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP127_0.5-0.6	24 Mar 2023	NATURAL: SHALE	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP129_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP131_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP133_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP133_0.9-1.0	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP135_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP135_0.5-0.6	24 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP137_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP137_FC3_0-0.1	24 Mar 2023	Grey Fibre Cement																	
DSI_TP139_0.2-0.3	24 Mar 2023	NATURAL: SHALE	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP141_0.2-0.3	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP143_0.3-0.4	24 Mar 2023	FILL: Silty SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP143_0.8-0.9	24 Mar 2023	NATURAL: SHALE	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP145_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP147_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP149_0.1-0.2	24 Mar 2023	FILL: Clayey Gravelly CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP149_0.4-0.5	24 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP151_0-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP151_0.3-0.4	24 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP153_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP155_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP157_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP157_0.6-0.7	24 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP159_0.3-0.4	24 Mar 2023	FILL: Gravelly CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP159_0.6-0.7	24 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP161_0.1-0.2	24 Mar 2023	FILL: Gravelly CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP163_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP165_0.3-0.4	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP165_1.0-1.1	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP165_1.6-1.7	24 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP167_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP167_0.4-0.5	23 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP169_0-0.2	23 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP171_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP173_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP173_0.5-0.7	23 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP175_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP175_0.4-0.6	23 Mar 2023	FILL: Silty LOAM	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP175_0.7-0.9	23 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP177_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP179_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP180_0.2_FC2	23 Mar 2023	Grey Fibre Cement	Normal																
DSI_TP181_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP181_0.5-0.6	23 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP183_0-0.2	23 Mar 2023	FILL: Gravelly CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP185_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP187_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP189_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP191_0.2-0.3	23 Mar 2023	FILL: Clayey Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP191_0-0.2_FC1	23 Mar 2023	Grey Fibre Cement	Normal																
DSI_TP191_0.5-0.6	23 Mar 2023	NATURAL: CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP193_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP195_0-0.2	23 Mar 2023	FILL: Gravelly CLAY	Normal		-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_BR1	23 Mar 2023	FILL: Gravelly SAND	Field_D	2023007644	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_SR1	23 Mar 2023	FILL: Gravelly SAND	Interlab_D	2023007644	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1
DSI_BR2	24 Mar 2023	FILL: Gravelly SAND	Field_D	2023007915	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI-SR2	24 Mar 2023	FILL: Gravelly SAND	Interlab_D	2023007915	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1
DSI1. BR3	27 Mar 2023	FILL: Gravelly SAND	Field_D	2023008100	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI1_SR3	28 Mar 2023	FILL: Gravelly SAND	Interlab_D	2023008100	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1
Statistics																			
Number of Results					**3**	**3**	**68**	**68**	**65**	**68**	**3**	**3**	**3**	**65**	**3**	**3**	**65**	**3**	**68**
Number of Detects					**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration					**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**
Maximum Concentration					**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**
Standard Deviation *					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95% UCL (Student's-t) *					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Field ID	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)
	PCBs							
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil								
PFAS NEMP 2020 Ecological direct exposure								
PFAS NEMP 2020 Ecological indirect exposure								
PFAS NEMP 2020 Industrial/ commercial (HIL D)								
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand								
Site Specific Ecological Investigation Level								
Site Specific Ecological Screening Level								
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil								7
DSI1.TP113_0.2-0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI1.TP113_0.5-0.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI1.TP115_0.2-0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI1.TP117_0-0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI1.TP119_0.1-0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI1.TP119_0.6-0.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI1.TP121_0.3-0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP123_0.3-0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP125_0-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP125_1.4-1.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP125_1.8-1.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP127_0.2-0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP127_0.5-0.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP129_0.1-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP131_0.1-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP133_0.1-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP133_0.9-1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP135_0.1-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP135_0.5-0.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP137_0-0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP137_FC3_0-0.1								
DSI_TP139_0.2-0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP141_0.2-0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP143_0.3-0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP143_0.8-0.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP145_0-0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP147_0-0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP149_0.1-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP149_0.4-0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP151_0-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP151_0.3-0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP153_0.1-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP155_0-0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP157_0.1-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP157_0.6-0.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP159_0.3-0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP159_0.6-0.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP161_0.1-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP163_0-0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP165_0.3-0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP165_1.0-1.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP165_1.6-1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP167_0-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP167_0.4-0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP169_0-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP171_0.2-0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP173_0-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP173_0.5-0.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP175_0-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP175_0.4-0.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP175_0.7-0.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP177_0-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP179_0-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP180_0.2_FC2								
DSI_TP181_0.2-0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP181_0.5-0.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP183_0-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP185_0-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP187_0.2-0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP189_0.2-0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP191_0.2-0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP191_0-0.2_FC1								
DSI_TP191_0.5-0.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP193_0.2-0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_TP195_0-0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_BR1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI_SR1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DSI_BR2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI-SR2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DSI1. BR3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-
DSI1_SR3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Statistics								
Number of Results	**68**	**68**	**68**	**68**	**68**	**68**	**68**	**3**
Number of Detects	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**
Maximum Concentration	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.1**
Standard Deviation *	-	-	-	-	-	-	-	-
95% UCL (Student's-t) *	-	-	-	-	-	-	-	-

Field ID	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Hexachlorobenzene
	Perfluoroalkane Sulfonic Acids					Perfluoroalkane Carboxylic Acids											Halogenated Benzenes
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg
EQL	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0.1
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																	
PFAS NEMP 2020 Ecological direct exposure					1,000					10,000							
PFAS NEMP 2020 Ecological indirect exposure					10												
PFAS NEMP 2020 Industrial/ commercial (HIL D)			20,000		20,000					50,000							
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																	
Site Specific Ecological Investigation Level																	
Site Specific Ecological Screening Level																	
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																	80
DSI1.TP113_0.2-0.3	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI1.TP113_0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI1.TP115_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI1.TP117_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI1.TP119_0.1-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI1.TP119_0.6-0.7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI1.TP121_0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP123_0.3-0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP125_0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP125_1.4-1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP125_1.8-1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP127_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP127_0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP129_0.1-0.2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP131_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP133_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP133_0.9-1.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP135_0.1-0.2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP135_0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP137_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP137_FC3_0-0.1																	
DSI_TP139_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP141_0.2-0.3	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP143_0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP143_0.8-0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP145_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP147_0-0.1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP149_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP149_0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP151_0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP151_0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP153_0.1-0.2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP155_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP157_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP157_0.6-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP159_0.3-0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP159_0.6-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP161_0.1-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP163_0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP165_0.3-0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP165_1.0-1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP165_1.6-1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP167_0-0.2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP167_0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP169_0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP171_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP173_0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP173_0.5-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP175_0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP175_0.4-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP175_0.7-0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP177_0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP179_0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP180_0.2_FC2																	
DSI_TP181_0.2-0.3	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP181_0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP183_0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP185_0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP187_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP189_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP191_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP191_0-0.2_FC1																	
DSI_TP191_0.5-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP193_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP195_0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_BR1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_SR1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1
DSI_BR2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI-SR2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1
DSI1. BR3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI1_SR3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1
Statistics																	
Number of Results	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**68**
Number of Detects	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<0.1**
Maximum Concentration	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<0.1**
Standard Deviation *	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95% UCL (Student's-t) *	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* A Non Detect Multiplier of 0.5 has been applied.

Environmental Standards

NEPM, NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil
HEPA, January 2020, PFAS NEMP 2020 Ecological direct exposure
HEPA, January 2020, PFAS NEMP 2020 Ecological indirect exposure
HEPA, January 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil

					Physical	Metals								BTEX								
					Moisture Content	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Naphthalene (VOC)	Total BTEX
					%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.1	4	0.3	1	1	1	0.1	1	1	0.2	0.5	1	2	1	1	1	2
NSW 2014 General Solid Waste CT1 (No Leaching)						100	20			100	4	40		10	288	600			1,000		
NSW 2014 General Solid Waste SCC1 (with leached)						500	100			1,500	50	1,050		18	518	1,080			1,800		
NSW 2014 General Solid Waste TCLP1 (leached)																					
NSW 2014 Restricted Solid Waste CT2 (No Leaching)						400	80			400	16	160		40	1,152	2,400			4,000		
NSW 2014 Restricted Solid Waste SCC2 (with leached)						2,000	400			6,000	200	4,200		72	2,073	4,320			7,200		
NSW 2014 Restricted Solid Waste TCLP2 (leached)																					
Field ID	**Date**	**Matrix Description**	**Sample Type**	**Parent Sample**																	
DSI1.TP113_0.2-0.3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		13.4	6.0	<0.30	26.3	47.0	31.4	<0.10	34.3	119.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI1.TP115_0.2-0.3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		12.9	5.7	<0.30	30.5	38.5	29.7	<0.10	35.0	96.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI1.TP117_0-0.1	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		15.0	7.3	<0.30	28.0	21.3	26.0	<0.10	21.9	47.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI1.TP119_0.1-0.3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		13.8	15.4	<0.30	23.7	25.3	21.9	<0.10	4.9	20.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI1.TP121_0.3-0.4	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		16.8	8.8	<0.30	32.5	30.9	21.3	<0.10	29.2	65.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP123_0.3-0.4	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		12.3	9.7	<0.30	17.7	22.5	13.9	<0.10	17.1	42.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP125_0-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		44.0	9.6	<0.30	24.3	35.9	24.3	<0.10	32.5	96.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP125_1.4-1.5	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		19.9	36.2	<0.30	35.6	30.6	22.3	<0.10	17.6	40.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP125_1.8-1.9	**28 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		15.8	26.2	<0.30	26.1	18.1	9.3	<0.10	9.0	33.0	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP127_0.2-0.3	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		21.3	9.7	<0.30	37.6	28.5	14.5	<0.10	37.4	86.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP129_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		16.2	11.0	<0.30	22.3	30.7	26.0	<0.10	28.4	72.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP131_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		15.4	6.7	<0.30	17.8	24.2	13.2	<0.10	16.8	42.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP133_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		15.0	10.0	<0.30	26.5	30.1	190.1	<0.10	14.8	142.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP135_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		28.2	7.5	<0.30	42.3	25.6	13.5	<0.10	37.2	68.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP137_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		17.1	<5.0	<0.30	13.8	18.1	19.7	<0.10	7.6	59.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP139_0.2-0.3	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		12.5	8.1	<0.30	12.3	24.9	10.2	<0.10	5.6	25.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP141_0.2-0.3	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		19.6	<5.0	<0.30	5.1	15.7	9.1	<0.10	1.9	8.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP145_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		17.9	<5.0	<0.30	17.2	34.8	36.1	<0.10	19.0	78.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP147_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		15.3	12.0	<0.30	22.9	28.1	15.8	<0.10	26.1	63.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP149_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		27.2	6.5	<0.30	19.8	67.7	39.6	<0.10	49.9	128.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP151_0-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		13.3	18.1	<0.30	15.3	30.4	23.5	0.12	12.3	59.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP153_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		14.2	<5.0	<0.30	12.0	24.7	46.5	<0.10	8.7	103.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP155_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		15.3	30.0	<0.30	19.1	27.7	24.0	<0.10	12.2	160.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP157_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		12.6	<5.0	<0.30	14.2	27.3	10.9	<0.10	9.6	51.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP159_0.3-0.4	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		11.5	14.5	<0.30	15.0	26.6	21.9	<0.10	15.5	60.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP161_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		6.4	<5.0	<0.30	4.6	<5.0	13.7	<0.10	4.0	28.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP163_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		8.6	<5.0	<0.30	18.4	31.1	29.5	<0.10	29.6	94.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP165_0.3-0.4	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		7.4	9.2	<0.30	18.4	21.2	28.7	<0.10	22.0	87.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP165_1.0-1.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		8.2	7.1	<0.30	21.9	26.7	22.9	<0.10	25.3	73.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP167_0-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		15.0	5.4	<0.30	15.3	33.2	33.2	0.14	21.2	81.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP169_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		10.9	10.3	<0.30	8.4	31.1	16.2	0.15	32.1	103.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP171_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		9.8	8.2	<0.30	12.3	38.2	22.1	0.11	18.3	66.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP173_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		14.4	7.5	<0.30	20.3	38.7	48.5	0.12	23.6	73.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP175_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		6.4	5.2	<0.30	20.2	25.5	37.1	0.12	22.0	53.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP175_0.4-0.6	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		12.1	10.2	<0.30	32.7	7.1	27.2	0.21	6.1	18.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP177_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		8.5	5.4	<0.30	27.7	25.8	23.2	0.10	24.3	57.8	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP179_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		9.9	<5.0	<0.30	13.2	27.0	17.6	0.29	11.1	62.0	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP181_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		6.8	<5.0	<0.30	10.4	13.6	19.8	0.23	11.1	48.0	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP183_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		19.7	7.8	<0.30	16.8	33.3	57.3	0.21	23.7	90.8	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP185_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		7.6	<5.0	<0.30	34.1	18.0	15.7	0.55	39.5	52.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP187_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		15.3	10.6	<0.30	12.9	21.0	20.5	0.10	10.7	35.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP189_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		11.2	<5.0	<0.30	10.8	26.6	13.3	0.16	7.3	39.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP191_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		5.1	<5.0	<0.30	16.3	40.8	23.5	0.12	18.3	50.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP193_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		5.1	6.0	<0.30	37.7	24.0	45.2	0.16	21.1	55.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_TP195_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		13.0	5.5	<0.30	24.0	24.0	40.8	0.16	22.1	63.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_BR1	**23 Mar 2023**	**FILL: Gravelly SAND**	**Field_D**	**2023007644**	7.1	5.4	<0.30	31.5	22.1	18.4	0.12	36.7	53.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI_SR1	**23 Mar 2023**	**FILL: Gravelly SAND**	**Interlab_D**	**2023007644**	6.4	<4	<0.4	29	24	12	<0.1	29	33	<0.2	<0.5	<1	<2	<1	<2	<1	-
DSI_BR2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Field_D**	**2023007915**	7.7	9.2	<0.30	15.2	17.3	23.3	<0.10	16.7	48.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI-SR2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Interlab_D**	**2023007915**	7.6	<4	<0.4	12	12	11	<0.1	9	22	<0.2	<0.5	<1	<2	<1	<2	<1	-
DSI1. BR3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Field_D**	**2023008100**	17.2	<5.0	<0.30	25.7	24.6	15.7	<0.10	20.2	38.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00
DSI1_SR3	**28 Mar 2023**	**FILL: Gravelly SAND**	**Interlab_D**	**2023008100**	18	8	<0.4	29	34	17	<0.1	22	51	<0.2	<0.5	<1	<2	<1	<1	<1	-

Statistics

Number of Results	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**3**	**48**
Number of Detects	**51**	**36**	**0**	**51**	**50**	**51**	**18**	**51**	**51**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration	**5.1**	**<4**	**<0.3**	**4.6**	**<5**	**9.1**	**0.1**	**1.9**	**8.6**	**<0.2**	**<0.5**	**<1**	**<2**	**<1**	**<1**	**<1**	**<2**
Maximum Concentration	**44**	**36.2**	**<0.4**	**42.3**	**67.7**	**190.1**	**0.55**	**49.9**	**160.9**	**<0.5**	**<0.5**	**<1**	**<2**	**<1**	**<2**	**<1**	**<2**
Standard Deviation *	-	-	-	-	-	**27.09**	-	**10.98**	-	-	-	-	-	-	-	-	-	-
95% Student's-t UCL	-	-	-	-	-	-	-	**22.7**	-	-	-	-	-	-	-	-	-	-
95% Chebyshev(Mean, Sd) UCL	-	-	-	-	-	**45.84**	-	-	-	-	-	-	-	-	-	-	-	-

* A Non Detect Multiplier of 0.5 has been applied.
* ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
*H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
*It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
As such, ADE Employed a more conservative 95% UCL, which still falls within the acceptable limits for the purposes of this investigation.

Environmental Standards
NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 General Solid Waste SCC1 (with leached)
NSW EPA, November 2014, NSW 2014 General Solid Waste TCLP1 (leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste SCC2 (with leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste TCLP2 (leached)

	TPH					TRH							PAH																
	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(b+j+k)fluoranthene	Benzo(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Chrysene	DBenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	PAHs (Sum of positives)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	25	50	100	100	50	25	25	50	50	100	100	50	0.1	0.1	0.1	0.2	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.05
NSW 2014 General Solid Waste CT1 (No Leaching)	650				10,000													0.8										
NSW 2014 General Solid Waste SCC1 (with leached)	650				10,000													10										
NSW 2014 General Solid Waste TCLP1 (leached)																													
NSW 2014 Restricted Solid Waste CT2 (No Leaching)	2,600				40,000													3.2										
NSW 2014 Restricted Solid Waste SCC2 (with leached)	2,600				40,000													23										
NSW 2014 Restricted Solid Waste TCLP2 (leached)																													

Field ID	Date	Matrix Description	Sample Type	Parent Sample																													
DSI1.TP113_0.2-0.3	27 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI1.TP115_0.2-0.3	27 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI1.TP117_0-0.1	27 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI1.TP119_0.1-0.3	27 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI1.TP121_0.3-0.4	27 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP123_0.3-0.4	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP125_0-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP125_1.4-1.5	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP125_1.8-1.9	28 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP127_0.2-0.3	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP129_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP131_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP133_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	0.32	0.57	0.45	<0.30	0.37	<0.30	0.85	<0.30	0.33	<0.30	<0.30	0.98	0.73	3.87
DSI_TP135_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP137_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP139_0.2-0.3	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP141_0.2-0.3	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP145_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	100	100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP147_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP149_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP151_0-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP153_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP155_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	114	114		<35	<35	<50	-	145	<100	145	<0.30	<0.30	<0.30	2.24	0.86	1.23	0.76	1.15	<0.30	0.53	<0.30	1.16	<0.30	<0.30	1.04	1.83	8.97
DSI_TP157_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	104	104		<35	<35	<50	-	<100	136	136	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP159_0.3-0.4	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP161_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.40	<0.30	<0.30	<0.30	0.36	0.35	0.76
DSI_TP163_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP165_0.3-0.4	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP165_1.0-1.1	24 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP167_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP169_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP171_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP173_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP175_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP175_0.4-0.6	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP177_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP179_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP181_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP183_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP185_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP187_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP189_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP191_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	<100	<100	<35	<35	<50	-	<100	120	120	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.73	<0.30	<0.30	<0.30	0.69	0.35	1.42
DSI_TP193_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	121	121	<35	<35	<50	-	<100	148	148	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_TP195_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<25	<50	<100	116	116	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_BR1	23 Mar 2023	FILL: Gravelly SAND	Field_D	2023007644	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI_SR1	23 Mar 2023	FILL: Gravelly SAND	Interlab_D	2023007644	<25	<50	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.05
DSI_BR2	24 Mar 2023	FILL: Gravelly SAND	Field_D	2023007915	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI-SR2	24 Mar 2023	FILL: Gravelly SAND	Interlab_D	2023007915	<25	<50	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.2	0.3	0.06	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.5	0.79
DSI1. BR3	27 Mar 2023	FILL: Gravelly SAND	Field_D	2023008100	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI1_SR3	28 Mar 2023	FILL: Gravelly SAND	Interlab_D	2023008100	<25	<50	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.05	<0.1	<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.5	<0.05

Statistics

Number of Results					51	51	51	51	51	51	51	51	3	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
Number of Detects					0	0	0	5	5	0	0	0	0	1	3	4	0	0	0	2	3	3	1	3	0	4	0	2	0	0	5	48	5
Minimum Concentration					<25	<50	<100	100	<50	<25	<25	<50	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.35	<0.05
Maximum Concentration					<25	<50	<100	121	121	<35	<35	<50	<50	145	148	148	<0.3	<0.3	<0.3	2.24	0.86	1.23	0.76	1.15	<0.3	0.85	<0.3	1.16	<0.3	<0.3	1.04	1.83	8.97
Standard Deviation *					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.14	-	-	-	-	-	-	-	-	-	-	-
95% Student's-t UCL					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.359	-	-	-	-	-	-	-	-	-	-	-
95% Chebyshev(Mean, Sd) UCL					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* A Non Detect Multiplier of 0.5 has been applied.
* ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
*H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
*It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
As such, ADE Employed a more conservative 95% UCL, which still falls within the acceptable limits for the purposes of this investigation.

Environmental Standards

NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 General Solid Waste SCC1 (with leached)
NSW EPA, November 2014, NSW 2014 General Solid Waste TCLP1 (leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste SCC2 (with leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste TCLP2 (leached)

					Organochlorine Pesticides																				
Field ID	Date	Matrix Description	Sample Type	Parent Sample	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NSW 2014 General Solid Waste CT1 (No Leaching)																									
NSW 2014 General Solid Waste SCC1 (with leached)																									
NSW 2014 General Solid Waste TCLP1 (leached)																									
NSW 2014 Restricted Solid Waste CT2 (No Leaching)																									
NSW 2014 Restricted Solid Waste SCC2 (with leached)																									
NSW 2014 Restricted Solid Waste TCLP2 (leached)																									
DSI1.TP113_0.2-0.3	27 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI1.TP115_0.2-0.3	27 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI1.TP117_0-0.1	27 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI1.TP119_0.1-0.3	27 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI1.TP121_0.3-0.4	27 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP123_0.3-0.4	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP125_0-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP125_1.4-1.5	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP125_1.8-1.9	28 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP127_0.2-0.3	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP129_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP131_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP133_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP135_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP137_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP139_0.2-0.3	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP141_0.2-0.3	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP145_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP147_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP149_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP151_0-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP153_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP155_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP157_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP159_0.3-0.4	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP161_0.1-0.2	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP163_0-0.1	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP165_0.3-0.4	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP165_1.0-1.1	24 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP167_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP169_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP171_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP173_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP175_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP175_0.4-0.6	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP177_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP179_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP181_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP183_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP185_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP187_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP189_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP191_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP193_0.2-0.3	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP195_0-0.2	23 Mar 2023	FILL: Gravelly SAND	Normal		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_BR1	23 Mar 2023	FILL: Gravelly SAND	Field_D	2023007644	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_SR1	23 Mar 2023	FILL: Gravelly SAND	Interlab_D	2023007644	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
DSI_BR2	24 Mar 2023	FILL: Gravelly SAND	Field_D	2023007915	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI-SR2	24 Mar 2023	FILL: Gravelly SAND	Interlab_D	2023007915	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
DSI1. BR3	27 Mar 2023	FILL: Gravelly SAND	Field_D	2023008100	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI1_SR3	28 Mar 2023	FILL: Gravelly SAND	Interlab_D	2023008100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1

	Organophosphorous Pesticides														
Field ID	Azinophos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Tribuphos	Diazinon	Dichlorvos	Dimethoate	Ethion	Ethoprop	Fenitrothion	Malathion	Methyl parathion	Parathion	Ronnel
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NSW 2014 General Solid Waste CT1 (No Leaching)			4												
NSW 2014 General Solid Waste SCC1 (with leached)			7.5												
NSW 2014 General Solid Waste TCLP1 (leached)															
NSW 2014 Restricted Solid Waste CT2 (No Leaching)			16												
NSW 2014 Restricted Solid Waste SCC2 (with leached)			30												
NSW 2014 Restricted Solid Waste TCLP2 (leached)															
DSI1.TP113_0.2-0.3	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI1.TP115_0.2-0.3	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI1.TP117_0-0.1	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI1.TP119_0.1-0.3	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI1.TP121_0.3-0.4	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP123_0.3-0.4	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP125_0-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP125_1.4-1.5	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP125_1.8-1.9	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP127_0.2-0.3	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP129_0.1-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP131_0.1-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP133_0.1-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP135_0.1-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP137_0-0.1	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP139_0.2-0.3	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP141_0.2-0.3	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP145_0-0.1	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP147_0-0.1	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP149_0.1-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP151_0-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP153_0.1-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP155_0-0.1	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP157_0.1-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP159_0.3-0.4	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP161_0.1-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP163_0-0.1	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP165_0.3-0.4	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP165_1.0-1.1	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP167_0-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP169_0-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP171_0.2-0.3	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP173_0-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP175_0-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP175_0.4-0.6	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP177_0-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP179_0-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP181_0.2-0.3	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP183_0-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP185_0-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP187_0.2-0.3	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP189_0.2-0.3	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP191_0.2-0.3	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP193_0.2-0.3	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_TP195_0-0.2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_BR1	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI_SR1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1
DSI_BR2	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI-SR2	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1
DSI1. BR3	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10
DSI1_SR3	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1

Statistics

Statistic	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
Number of Results	51	51	51	51	51	51	51	51	51	3	51	51	51	51	51	51	48	51	51	51	51
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Standard Deviation *	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95% Student's-t UCL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95% Chebyshev(Mean, Sd) UCL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Statistic	Azinophos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Tribuphos	Diazinon	Dichlorvos	Dimethoate	Ethion	Ethoprop	Fenitrothion	Malathion	Methyl parathion	Parathion	Ronnel
Number of Results	3	3	51	51	48	51	3	3	3	48	3	3	48	3	51
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Standard Deviation *	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95% Student's-t UCL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95% Chebyshev(Mean, Sd) UCL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* A Non Detect Multiplier of 0.5 has been applied.
* ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
*H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
*It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
As such, ADE Employed a more conservative 95% UCL, which still falls within the acceptable limits for the purposes of this investigation.

Environmental Standards

NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 General Solid Waste SCC1 (with leached)
NSW EPA, November 2014, NSW 2014 General Solid Waste TCLP1 (leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste SCC2 (with leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste TCLP2 (leached)

					PCBs							Perfluoroalkane Sulfonic Acids					Perfluoroalkane Carboxylic Acids											Halogenated Benzenes
					Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Hexachlorobenzene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg
EQL					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0.1
NSW 2014 General Solid Waste CT1 (No Leaching)												50																
NSW 2014 General Solid Waste SCC1 (with leached)												50																
NSW 2014 General Solid Waste TCLP1 (leached)																												
NSW 2014 Restricted Solid Waste CT2 (No Leaching)												50																
NSW 2014 Restricted Solid Waste SCC2 (with leached)												50																
NSW 2014 Restricted Solid Waste TCLP2 (leached)																												
Field ID	**Date**	**Matrix Description**	**Sample Type**	**Parent Sample**																								
DSI1.TP113_0.2-0.3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI1.TP115_0.2-0.3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI1.TP117_0-0.1	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI1.TP119_0.1-0.3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI1.TP121_0.3-0.4	**27 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP123_0.3-0.4	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP125_0-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP125_1.4-1.5	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP125_1.8-1.9	**28 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP127_0.2-0.3	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP129_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP131_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP133_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP135_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP137_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP139_0.2-0.3	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP141_0.2-0.3	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP145_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP147_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP149_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP151_0-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP153_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP155_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP157_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP159_0.3-0.4	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP161_0.1-0.2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP163_0-0.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP165_0.3-0.4	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP165_1.0-1.1	**24 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP167_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP169_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP171_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP173_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP175_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP175_0.4-0.6	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP177_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP179_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP181_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP183_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP185_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP187_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP189_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP191_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP193_0.2-0.3	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP195_0-0.2	**23 Mar 2023**	**FILL: Gravelly SAND**	**Normal**		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_BR1	**23 Mar 2023**	**FILL: Gravelly SAND**	**Field_D**	**2023007644**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI_SR1	**23 Mar 2023**	**FILL: Gravelly SAND**	**Interlab_D**	**2023007644**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1
DSI_BR2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Field_D**	**2023007915**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI-SR2	**24 Mar 2023**	**FILL: Gravelly SAND**	**Interlab_D**	**2023007915**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1
DSI1. BR3	**27 Mar 2023**	**FILL: Gravelly SAND**	**Field_D**	**2023008100**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI1_SR3	**28 Mar 2023**	**FILL: Gravelly SAND**	**Interlab_D**	**2023008100**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1

Statistics

Number of Results	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**3**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**51**
Number of Detects	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<0.1**
Maximum Concentration	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.1**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<0.1**
Standard Deviation *	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95% Student's-t UCL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95% Chebyshev(Mean, Sd) UCL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	--	-	-	-

* A Non Detect Multiplier of 0.5 has been applied.

* ProUCL computes and outputs H-statistic based UCLs for historical reasons only.

*H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.

*It is therefore recommended to avoid the use of H-statistic based 95% UCLs.

As such, ADE Employed a more conservative 95% UCL, which still falls within the acceptable limits for the purposes of this investigation.

Environmental Standards

NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)

NSW EPA, November 2014, NSW 2014 General Solid Waste SCC1 (with leached)

NSW EPA, November 2014, NSW 2014 General Solid Waste TCLP1 (leached)

NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)

NSW EPA, November 2014, NSW 2014 Restricted Solid Waste SCC2 (with leached)

NSW EPA, November 2014, NSW 2014 Restricted Solid Waste TCLP2 (leached)

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.18/05/2023 2:09:10 PM
From File	WorkSheet_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

B(a)P- 95% UCL

General Statistics

Total Number of Observations	45	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.3	Mean	0.324
Maximum	1.23	Median	0.3
SD	0.14	Std. Error of Mean	0.0209
Coefficient of Variation	0.432	Skewness	6.469

Normal GOF Test

Shapiro Wilk Test Statistic	0.184	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.945	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.524	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.131	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.359	95% Adjusted-CLT UCL (Chen-1995)	0.38
		95% Modified-t UCL (Johnson-1978)	0.362

Gamma GOF Test

A-D Test Statistic	15.89	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.748	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.532	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.132	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	13.83	k star (bias corrected MLE)	12.92
Theta hat (MLE)	0.0234	Theta star (bias corrected MLE)	0.0251
nu hat (MLE)	1244	nu star (bias corrected)	1163
MLE Mean (bias corrected)	0.324	MLE Sd (bias corrected)	0.0901
		Approximate Chi Square Value (0.05)	1085
Adjusted Level of Significance	0.0447	Adjusted Chi Square Value	1082

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.347	95% Adjusted Gamma UCL (use when n<50)	0.348

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.203	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.945	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.529	**Lilliefors Lognormal GOF Test**

55	5% Lilliefors Critical Value					0.131	Data Not Lognormal at 5% Significance Level					
56	**Data Not Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59	Minimum of Logged Data					-1.204	Mean of logged Data					-1.164
60	Maximum of Logged Data					0.207	SD of logged Data					0.218
61												
62	**Assuming Lognormal Distribution**											
63	95% H-UCL					0.338	90% Chebyshev (MVUE) UCL					0.351
64	95% Chebyshev (MVUE) UCL					0.365	97.5% Chebyshev (MVUE) UCL					0.385
65	99% Chebyshev (MVUE) UCL					0.424						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data do not follow a Discernible Distribution (0.05)**											
69												
70	**Nonparametric Distribution Free UCLs**											
71	95% CLT UCL					0.358	95% Jackknife UCL					0.359
72	95% Standard Bootstrap UCL					N/A	95% Bootstrap-t UCL					N/A
73	95% Hall's Bootstrap UCL					N/A	95% Percentile Bootstrap UCL					N/A
74	95% BCA Bootstrap UCL					N/A						
75	90% Chebyshev(Mean, Sd) UCL					0.387	95% Chebyshev(Mean, Sd) UCL					0.415
76	97.5% Chebyshev(Mean, Sd) UCL					0.454	99% Chebyshev(Mean, Sd) UCL					0.532
77												
78	**Suggested UCL to Use**											
79	95% Student's-t UCL					0.359	or 95% Modified-t UCL					0.362
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.18/05/2023 2:05:22 PM
From File	WorkSheet_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Ni- 95% UCL

General Statistics

Total Number of Observations	45	Number of Distinct Observations	42
		Number of Missing Observations	0
Minimum	1.9	Mean	19.95
Maximum	49.9	Median	19
SD	10.98	Std. Error of Mean	1.637
Coefficient of Variation	0.551	Skewness	0.496

Normal GOF Test

Shapiro Wilk Test Statistic	0.966	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.945	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.0904	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.131	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.7	95% Adjusted-CLT UCL (Chen-1995)	22.78
		95% Modified-t UCL (Johnson-1978)	22.72

Gamma GOF Test

A-D Test Statistic	0.355	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.757	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.105	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.133	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.788	k star (bias corrected MLE)	2.617
Theta hat (MLE)	7.158	Theta star (bias corrected MLE)	7.626
nu hat (MLE)	250.9	nu star (bias corrected)	235.5
MLE Mean (bias corrected)	19.95	MLE Sd (bias corrected)	12.34
		Approximate Chi Square Value (0.05)	201
Adjusted Level of Significance	0.0447	Adjusted Chi Square Value	199.9

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	23.38	95% Adjusted Gamma UCL (use when n<50)	23.5

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.939	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.945	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.133	**Lilliefors Lognormal GOF Test**

55	5% Lilliefors Critical Value					0.131	Data Not Lognormal at 5% Significance Level					
56	**Data Not Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59	Minimum of Logged Data					0.642	Mean of logged Data					2.803
60	Maximum of Logged Data					3.91	SD of logged Data					0.69
61												
62	**Assuming Lognormal Distribution**											
63	95% H-UCL					25.94	90% Chebyshev (MVUE) UCL					27.79
64	95% Chebyshev (MVUE) UCL					30.95	97.5% Chebyshev (MVUE) UCL					35.35
65	99% Chebyshev (MVUE) UCL					43.98						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
69												
70	**Nonparametric Distribution Free UCLs**											
71	95% CLT UCL					22.65	95% Jackknife UCL					22.7
72	95% Standard Bootstrap UCL					22.63	95% Bootstrap-t UCL					22.92
73	95% Hall's Bootstrap UCL					22.98	95% Percentile Bootstrap UCL					22.55
74	95% BCA Bootstrap UCL					22.71						
75	90% Chebyshev(Mean, Sd) UCL					24.87	95% Chebyshev(Mean, Sd) UCL					27.09
76	97.5% Chebyshev(Mean, Sd) UCL					30.18	99% Chebyshev(Mean, Sd) UCL					36.25
77												
78	**Suggested UCL to Use**											
79	95% Student's-t UCL					22.7						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.18/05/2023 1:55:37 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Pb- 95% UCL

General Statistics

Total Number of Observations	45	Number of Distinct Observations	42
		Number of Missing Observations	0
Minimum	9.1	Mean	28.24
Maximum	190.1	Median	22.9
SD	27.09	Std. Error of Mean	4.038
Coefficient of Variation	0.959	Skewness	5.069

Normal GOF Test

Shapiro Wilk Test Statistic	0.508	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.945	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.24	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.131	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	35.02	95% Adjusted-CLT UCL (Chen-1995)	38.14
		95% Modified-t UCL (Johnson-1978)	35.53

Gamma GOF Test

A-D Test Statistic	1.513	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.757	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.143	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.133	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.764	k star (bias corrected MLE)	2.594
Theta hat (MLE)	10.22	Theta star (bias corrected MLE)	10.89
nu hat (MLE)	248.7	nu star (bias corrected)	233.5
MLE Mean (bias corrected)	28.24	MLE Sd (bias corrected)	17.53
		Approximate Chi Square Value (0.05)	199.1
Adjusted Level of Significance	0.0447	Adjusted Chi Square Value	198.1

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	33.11	95% Adjusted Gamma UCL (use when n<50)	33.29

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.936	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.945	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0922	**Lilliefors Lognormal GOF Test**

55	5% Lilliefors Critical Value					0.131	Data appear Lognormal at 5% Significance Level					
56	**Data appear Approximate Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59	Minimum of Logged Data					2.208	Mean of logged Data					3.149
60	Maximum of Logged Data					5.248	SD of logged Data					0.552
61												
62	**Assuming Lognormal Distribution**											
63	95% H-UCL					31.91	90% Chebyshev (MVUE) UCL					34.11
64	95% Chebyshev (MVUE) UCL					37.31	97.5% Chebyshev (MVUE) UCL					41.76
65	99% Chebyshev (MVUE) UCL					50.49						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
69												
70	**Nonparametric Distribution Free UCLs**											
71	95% CLT UCL					34.88	95% Jackknife UCL					35.02
72	95% Standard Bootstrap UCL					34.72	95% Bootstrap-t UCL					43.46
73	95% Hall's Bootstrap UCL					61.9	95% Percentile Bootstrap UCL					35.5
74	95% BCA Bootstrap UCL					40.44						
75	90% Chebyshev(Mean, Sd) UCL					40.35	95% Chebyshev(Mean, Sd) UCL					45.84
76	97.5% Chebyshev(Mean, Sd) UCL					53.45	99% Chebyshev(Mean, Sd) UCL					68.41
77												
78	**Suggested UCL to Use**											
79	95% H-UCL					31.91						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												
86	**ProUCL computes and outputs H-statistic based UCLs for historical reasons only.**											
87	**H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.**											
88	**It is therefore recommended to avoid the use of H-statistic based 95% UCLs.**											
89	**Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.**											
90												

		Physical	Metals								BTEX							TPH				
		Moisture Content	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)
		%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			5	0.3	1	5	5	0.1	1	5	0.5	0.5	1	2	1	2	2	25	50	100	100	100
ANZECC (1992) Background Ranges (VENM)			30	2		190	200	0.1	400	180	0	0	0			0		0				
Berkman (1989) Background Ranges (VENM)			50	1		100	200	0.03	500	300	0	0	0			0		0				
Field ID	**Date**																					
DSI1.TP113_0.5-0.6	27 Mar 2023	16.9	7.2	<0.30	36.0	40.9	27.9	<0.10	30.7	81.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI1.TP119_0.6-0.7	27 Mar 2023	13.4	12.1	<0.30	33.9	21.2	36.3	<0.10	19.5	31.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP127_0.5-0.6	24 Mar 2023	21.2	17.6	<0.30	60.4	41.6	17.6	<0.10	54.6	124.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP133_0.9-1.0	24 Mar 2023	10.3	11.5	<0.30	27.1	36.0	17.3	<0.10	35.0	80.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP135_0.5-0.6	24 Mar 2023	17.6	<5.0	<0.30	15.5	32.3	31.6	<0.10	17.1	73.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP143_0.3-0.4	24 Mar 2023	9.5	12.2	<0.30	46.2	38.1	26.9	<0.10	74.0	94.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP143_0.8-0.9	24 Mar 2023	11.3	18.5	<0.30	18.9	37.7	14.3	0.31	17.1	84.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP149_0.4-0.5	24 Mar 2023	18.0	66.3	<0.30	6.7	46.0	14.0	<0.10	6.5	76.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP151_0.3-0.4	24 Mar 2023	15.7	22.7	<0.30	27.8	21.8	35.3	<0.10	6.5	34.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP157_0.6-0.7	24 Mar 2023	15.9	14.1	<0.30	13.7	34.0	18.7	<0.10	13.1	84.8	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP159_0.6-0.7	24 Mar 2023	15.2	18.5	<0.30	19.5	25.8	21.3	<0.10	15.9	63.7	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP165_1.6-1.7	24 Mar 2023	11.6	<5.0	<0.30	6.9	52.7	98.4	<0.10	26.2	110.7	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP167_0.4-0.5	23 Mar 2023	14.2	15.9	<0.30	12.9	34.1	17.9	0.11	16.8	77.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP173_0.5-0.7	23 Mar 2023	15.7	<5.0	<0.30	7.9	16.3	11.0	0.15	3.2	17.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP175_0.7-0.9	23 Mar 2023	15.2	13.4	<0.30	20.5	14.0	17.1	0.13	7.7	21.9	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP181_0.5-0.6	23 Mar 2023	11.8	<5.0	<0.30	1.9	17.8	5.1	0.13	3.9	14.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
DSI_TP191_0.5-0.6	23 Mar 2023	13.6	7.2	<0.30	15.3	38.3	15.5	0.18	17.0	75.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50	<100	<100	<100
Statistics																						
Number of Results		17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Number of Detects		17	13	0	17	17	17	6	17	17	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration		9.5	<5	<0.3	1.9	14	5.1	<0.1	3.2	14.6	<0.5	<0.5	<1	<2	<1	<2	<2	<25	<50	<100	<100	<100
Maximum Concentration		21.2	66.3	<0.3	60.4	52.7	98.4	0.31	74	124.2	<0.5	<0.5	<1	<2	<1	<2	<2	<25	<50	<100	<100	<100

		TRH						PAH														
		C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(b+j+k)fluoranthene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		35	35	50	100	100	100	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
ANZECC (1992) Background Ranges (VENM)				0	0	0							0									
Berkman (1989) Background Ranges (VENM)				0	0	0							0									
Field ID	**Date**																					
DSI1.TP113_0.5-0.6	27 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI1.TP119_0.6-0.7	27 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP127_0.5-0.6	24 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP133_0.9-1.0	24 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP135_0.5-0.6	24 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP143_0.3-0.4	24 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP143_0.8-0.9	24 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP149_0.4-0.5	24 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP151_0.3-0.4	24 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP157_0.6-0.7	24 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP159_0.6-0.7	24 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP165_1.6-1.7	24 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP167_0.4-0.5	23 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP173_0.5-0.7	23 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP175_0.7-0.9	23 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP181_0.5-0.6	23 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI_TP191_0.5-0.6	23 Mar 2023	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Statistics																						
Number of Results		17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Number of Detects		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration		<35	<35	<50	<100	<100	<100	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Maximum Concentration		<35	<35	<50	<100	<100	<100	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3

			Organochlorine Pesticides																			
		PAHs (Sum of positives)	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
ANZECC (1992) Background Ranges (VENM)																						
Berkman (1989) Background Ranges (VENM)																						
Field ID	**Date**																					
DSI1.TP113_0.5-0.6	27 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI1.TP119_0.6-0.7	27 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP127_0.5-0.6	24 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP133_0.9-1.0	24 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP135_0.5-0.6	24 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP143_0.3-0.4	24 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP143_0.8-0.9	24 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP149_0.4-0.5	24 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP151_0.3-0.4	24 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP157_0.6-0.7	24 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP159_0.6-0.7	24 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP165_1.6-1.7	24 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP167_0.4-0.5	23 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP173_0.5-0.7	23 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP175_0.7-0.9	23 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP181_0.5-0.6	23 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI_TP191_0.5-0.6	23 Mar 2023	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Statistics																						
Number of Results		17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Number of Detects		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration		<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum Concentration		<0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

		Organophosphorous Pesticides							PCBs							Perfluoroalkane Sulfonic Acids						
		Chlorpyrifos	Chlorpyrifos-methyl	Tribuphos	Diazinon	Ethoprop	Methyl parathion	Ronnel	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
EQL		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	5	5	5	5	5	5
ANZECC (1992) Background Ranges (VENM)																						
Berkman (1989) Background Ranges (VENM)																						
Field ID	**Date**																					
DSI1.TP113_0.5-0.6	**27 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI1.TP119_0.6-0.7	**27 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5	<5	<5	<5	<5	<5	<5
DSI_TP127_0.5-0.6	**24 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP133_0.9-1.0	**24 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP135_0.5-0.6	**24 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP143_0.3-0.4	**24 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP143_0.8-0.9	**24 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP149_0.4-0.5	**24 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP151_0.3-0.4	**24 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP157_0.6-0.7	**24 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP159_0.6-0.7	**24 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP165_1.6-1.7	**24 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP167_0.4-0.5	**23 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP173_0.5-0.7	**23 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP175_0.7-0.9	**23 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP181_0.5-0.6	**23 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
DSI_TP191_0.5-0.6	**23 Mar 2023**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-
Statistics																						
Number of Results		17	17	17	17	17	17	17	17	17	17	17	17	17	17	1	1	1	1	1	1	1
Number of Detects		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<5	<5	<5	<5
Maximum Concentration		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<5	<5	<5	<5

	Perfluoroalkane Carboxylic Acids									Halogenated Benzenes
	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Hexachlorobenzene
	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg
EQL	5	5	5	5	5	5	5	5	5	0.1
ANZECC (1992) Background Ranges (VENM)										
Berkman (1989) Background Ranges (VENM)										
Field ID	**Date**									
DSI1.TP113_0.5-0.6	**27 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI1.TP119_0.6-0.7	**27 Mar 2023**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI_TP127_0.5-0.6	**24 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP133_0.9-1.0	**24 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP135_0.5-0.6	**24 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP143_0.3-0.4	**24 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP143_0.8-0.9	**24 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP149_0.4-0.5	**24 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP151_0.3-0.4	**24 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP157_0.6-0.7	**24 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP159_0.6-0.7	**24 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP165_1.6-1.7	**24 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP167_0.4-0.5	**23 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP173_0.5-0.7	**23 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP175_0.7-0.9	**23 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP181_0.5-0.6	**23 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10
DSI_TP191_0.5-0.6	**23 Mar 2023**	-	-	-	-	-	-	-	-	-	<0.10

Statistics

Number of Results	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**17**
Number of Detects	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<0.1**
Maximum Concentration	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<0.1**

Appendix IV – QA/QC Output

QAQC Output- Inter and Intra Laboratory Duplicate RPD Calculations

		Lab Report Number	A101023.0120.00 (644-667)	A101023.0120.00 (644-667)		A101023.0120.00 (644-667)	319488		A101023.0120.00 (907-917)	A101023.0120.00 (882-906)	
		Field ID	DSI_TP18S_0-0.2	DSI_BR1		DSI_TP18S_0-0.2	DSI_SR1		DSI_TP16S_0.3-0.4	DSI_BR2	
		Date	23 Mar 2023	23 Mar 2023		23 Mar 2023	23 Mar 2023		24 Mar 2023	24 Mar 2023	
		Matrix Type	Soil	Soil	RPD	Soil	Soil	RPD	Soil	Soil	RPD
	Unit	EQL									
BTEX											
Naphthalene (VOC)	mg/kg	1					<1				
Benzene	mg/kg	0.2	<0.50	<0.50	0	<0.50	<0.2	0	<0.50	<0.50	0
Toluene	mg/kg	0.5	<0.50	<0.50	0	<0.50	<0.5	0	<0.50	<0.50	0
Ethylbenzene	mg/kg	1	<1.0	<1.0	0	<1.0	<1	0	<1.0	<1.0	0
Xylene (m & p)	mg/kg	2	<2.0	<2.0	0	<2.0	<2	0	<2.0	<2.0	0
Xylene (o)	mg/kg	1	<1.0	<1.0	0	<1.0	<1	0	<1.0	<1.0	0
Xylene Total	mg/kg	1	<2.0	<2.0	0	<2.0	<1	0	<2.0	<2.0	0
Total BTEX	mg/kg	2	<2.00	<2.00	0	<2.00			<2.00	<2.00	0
TRH											
C6-C10 Fraction (F1)	mg/kg	25	<35	<35	0	<35	<25	0	<35	<35	0
C6-C10 (F1 minus BTEX)	mg/kg	25	<35	<35	0	<35	<25	0	<35	<35	0
>C10-C16 Fraction (F2)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0
>C10-C16 Fraction (F2 minus Naphthalene)	mg/kg	50					<50				
>C16-C34 Fraction (F3)	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0
>C34-C40 Fraction (F4)	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0
>C10-C40 Fraction (Sum)	mg/kg	50	<100	<100	0	<100	<50	0	<100	<100	0
Halogenated Benzenes											
Hexachlorobenzene	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Perfluoroalkane Carboxylic Acids											
Perfluorobutanoic acid (PFBA)	mg/kg	0.005							<0.005		
Perfluorohexanoic acid (PFHxA)	mg/kg	0.005							<0.005		
Perfluoropentanoic acid (PFPeA)	mg/kg	0.005							<0.005		
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.005							<0.005		
Perfluorooctanoic acid (PFOA)	mg/kg	0.005							<0.005		
Perfluorodecanoic acid (PFDA)	mg/kg	0.005							<0.005		
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.005							<0.005		
Perfluorononanoic acid (PFNA)	mg/kg	0.005							<0.005		
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.005							<0.005		
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.005							<0.005		
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.005							<0.005		
Perfluoroalkane Sulfonic Acids											
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.005							<0.005		
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.005							<0.005		
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.005							<0.005		
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.005							<0.005		
Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.005							<0.005		
Inorganics											
Moisture Content	%	0.1	7.6	7.1	7	7.6	6.4	17	7.4	7.7	4
Metals											
Arsenic	mg/kg	4	<5.0	5.4	8	<5.0	<4	0	9.2	9.2	0
Cadmium	mg/kg	0.3	<0.30	<0.30	0	<0.30	<0.4	0	<0.30	<0.30	0
Chromium (III+VI)	mg/kg	1	34.1	31.5	8	34.1	29	16	18.4	15.2	19
Copper	mg/kg	1	18.0	22.1	20	18.0	24	29	21.2	17.3	20
Lead	mg/kg	1	15.7	18.4	16	15.7	12	27	28.7	23.3	21
Mercury	mg/kg	0.1	0.55	0.12	128	0.55	<0.1	138	<0.10	<0.10	0
Nickel	mg/kg	1	39.5	36.7	7	39.5	29	31	22.0	16.7	27
Zinc	mg/kg	1	52.3	53.5	2	52.3	33	45	87.3	48.9	56
Organochlorine Pesticides											
4,4-DDE	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
a-BHC	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Aldrin	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
b-BHC	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Chlordane (cis)	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Chlordane (trans)	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0

QAQC Output- Inter and Intra Laboratory Duplicate RPD Calculations

			Lab Report Number	A101023.0120.00 (644-667)	A101023.0120.00 (644-667)		A101023.0120.00 (644-667)	319488		A101023.0120.00 (907-917)	A101023.0120.00 (882-906)	
			Field ID	DSI_TP185_0-0.2	DSI_BR1		DSI_TP185_0-0.2	DSI_SR1		DSI_TP165_0.3-0.4	DSI_BR2	
			Date	23 Mar 2023	23 Mar 2023		23 Mar 2023	23 Mar 2023		24 Mar 2023	24 Mar 2023	
			Matrix Type	Soil	Soil	RPD	Soil	Soil	RPD	Soil	Soil	RPD
	Unit	EQL										
d-BHC	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
DDD	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
DDT	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
DDT+DDE+DDD	mg/kg	0.1						<0.1				
Dieldrin	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Endosulfan I	mg/kg	0.1		<0.20	<0.20	0	<0.20	<0.1	0	<0.20	<0.20	0
Endosulfan II	mg/kg	0.1		<0.20	<0.20	0	<0.20	<0.1	0	<0.20	<0.20	0
Endosulfan sulphate	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Endrin	mg/kg	0.1		<0.20	<0.20	0	<0.20	<0.1	0	<0.20	<0.20	0
Endrin aldehyde	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Endrin ketone	mg/kg	0.1		<0.10	<0.10	0	<0.10			<0.10	<0.10	0
g-BHC (Lindane)	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Heptachlor	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Heptachlor epoxide	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Methoxychlor	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Organophosphorous Pesticides												
Azinophos methyl	mg/kg	0.1						<0.1				
Bromophos-ethyl	mg/kg	0.1						<0.1				
Chlorpyrifos	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Chlorpyrifos-methyl	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Diazinon	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
Dichlorvos	mg/kg	0.1						<0.1				
Dimethoate	mg/kg	0.1						<0.1				
Ethion	mg/kg	0.1						<0.1				
Ethoprop	mg/kg	0.1		<0.10	<0.10	0	<0.10			<0.10	<0.10	0
Fenitrothion	mg/kg	0.1						<0.1				
Malathion	mg/kg	0.1						<0.1				
Methyl parathion	mg/kg	0.1		<0.10	<0.10	0	<0.10			<0.10	<0.10	0
Ronnel	mg/kg	0.1		<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0
PAH												
Benzo(b+j+k)fluoranthene	mg/kg	0.2		<0.30	<0.30	0	<0.30	<0.2	0	<0.30	<0.30	0
Acenaphthene	mg/kg	0.1		<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0
Acenaphthylene	mg/kg	0.1		<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0
Anthracene	mg/kg	0.1		<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0
Benzo(a)anthracene	mg/kg	0.1		<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0
Benzo(a) pyrene	mg/kg	0.05		<0.30	<0.30	0	<0.30	<0.05	0	<0.30	<0.30	0
Benzo(g,h,i)perylene	mg/kg	0.1		<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0
Chrysene	mg/kg	0.1		<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0
Dibenz(a,h)anthracene	mg/kg	0.1		<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0
Fluoranthene	mg/kg	0.1		<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0
Fluorene	mg/kg	0.1		<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1		<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0
Naphthalene	mg/kg	0.1		<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0
Phenanthrene	mg/kg	0.1		<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0
Pyrene	mg/kg	0.1		<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0
PAHs (Sum of positives)	mg/kg	0.05		<0.30	<0.30	0	<0.30	<0.05	0	<0.30	<0.30	0
PCBs												
Arochlor 1016	mg/kg	0.1		<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0
Arochlor 1221	mg/kg	0.1		<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0
Arochlor 1232	mg/kg	0.1		<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0
Arochlor 1242	mg/kg	0.1		<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0
Arochlor 1248	mg/kg	0.1		<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0
Arochlor 1254	mg/kg	0.1		<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0
Arochlor 1260	mg/kg	0.1		<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0
PCBs (Sum of total)	mg/kg	0.1						<0.1				
Pesticides												
DEF	mg/kg	0.1		<0.10	<0.10	0	<0.10			<0.10	<0.10	0
Parathion	mg/kg	0.1						<0.1				
TPH												
C6-C9 Fraction	mg/kg	25		<25	<25	0	<25	<25	0	<25	<25	0
C10-C14 Fraction	mg/kg	50		<50	<50	0	<50	<50	0	<50	<50	0
C15-C28 Fraction	mg/kg	100		<100	<100	0	<100	<100	0	<100	<100	0
C29-C36 Fraction	mg/kg	100		<100	<100	0	<100	<100	0	<100	<100	0
C10-C36 Fraction (Sum)	mg/kg	50		<100	<100	0	<100	<50	0	<100	<100	0

***RPDs have only been considered where a concentration is greater than 1 times the EQL.**

****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 100 (1 - 10 x EQL); 50 (10 - 20 x EQL); 30 (> 20 x EQL))**

*****Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory**

		A101023.0120.00 (907-917)	319629		A101023.0120.00 (090-101)	A101023.0120.00 (090-101)		A101023.0120.00 (090-101)	319756	
		DSI_TP165_0.3-0.4	DSI-SR2		DSI1.TP121_0.3-0.4	DSI1. BR3		DSI1.TP121_0.3-0.4	DSI1_SR3	
		24 Mar 2023	24 Mar 2023		27 Mar 2023	27 Mar 2023		27 Mar 2023	28 Mar 2023	
		Soil	Soil	RPD	Soil	Soil	RPD	Soil	Soil	RPD
	Unit									
BTEX										
Naphthalene (VOC)	mg/kg		<1						<1	
Benzene	mg/kg	<0.50	<0.2	0	<0.50	<0.50	0	<0.50	<0.2	0
Toluene	mg/kg	<0.50	<0.5	0	<0.50	<0.50	0	<0.50	<0.5	0
Ethylbenzene	mg/kg	<1.0	<1	0	<1.0	<1.0	0	<1.0	<1	0
Xylene (m & p)	mg/kg	<2.0	<2	0	<2.0	<2.0	0	<2.0	<2	0
Xylene (o)	mg/kg	<1.0	<1	0	<1.0	<1.0	0	<1.0	<1	0
Xylene Total	mg/kg	<2.0	<1	0	<2.0	<2.0	0	<2.0	<1	0
Total BTEX	mg/kg	<2.00			<2.00	<2.00	0	<2.00		
TRH										
C6-C10 Fraction (F1)	mg/kg	<35	<25	0	<35	<35	0	<35	<25	0
C6-C10 (F1 minus BTEX)	mg/kg	<35	<25	0	<35	<35	0	<35	<25	0
>C10-C16 Fraction (F2)	mg/kg	<50	<50	0	<50	<50	0	<50	<50	0
>C10-C16 Fraction (F2 minus Naphthalene)	mg/kg		<50						<50	
>C16-C34 Fraction (F3)	mg/kg	<100	<100	0	<100	<100	0	<100	<100	0
>C34-C40 Fraction (F4)	mg/kg	<100	<100	0	<100	<100	0	<100	<100	0
>C10-C40 Fraction (Sum)	mg/kg	<100	<50	0	<100	<100	0	<100	<50	0
Halogenated Benzenes										
Hexachlorobenzene	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Perfluoroalkane Carboxylic Acids										
Perfluorobutanoic acid (PFBA)	mg/kg	<0.005								
Perfluorohexanoic acid (PFHxA)	mg/kg	<0.005								
Perfluoropentanoic acid (PFPeA)	mg/kg	<0.005								
Perfluoroheptanoic acid (PFHpA)	mg/kg	<0.005								
Perfluorooctanoic acid (PFOA)	mg/kg	<0.005								
Perfluorodecanoic acid (PFDA)	mg/kg	<0.005								
Perfluorododecanoic acid (PFDoDA)	mg/kg	<0.005								
Perfluorononanoic acid (PFNA)	mg/kg	<0.005								
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	<0.005								
Perfluorotridecanoic acid (PFTrDA)	mg/kg	<0.005								
Perfluoroundecanoic acid (PFUnDA)	mg/kg	<0.005								
Perfluoroalkane Sulfonic Acids										
Perfluorobutane sulfonic acid (PFBS)	mg/kg	<0.005								
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	<0.005								
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	<0.005								
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	<0.005								
Perfluorooctane sulfonic acid (PFOS)	mg/kg	<0.005								
Inorganics										
Moisture Content	%	7.4	7.6	3	16.8	17.2	2	16.8	18	7
Metals										
Arsenic	mg/kg	9.2	<4	79	8.8	<5.0	55	8.8	8	10
Cadmium	mg/kg	<0.30	<0.4	0	<0.30	<0.30	0	<0.30	<0.4	0
Chromium (III+VI)	mg/kg	18.4	12	42	32.5	25.7	23	32.5	29	11
Copper	mg/kg	21.2	12	55	30.9	24.6	23	30.9	34	10
Lead	mg/kg	28.7	11	89	21.3	15.7	30	21.3	17	22
Mercury	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Nickel	mg/kg	22.0	9	84	29.2	20.2	36	29.2	22	28
Zinc	mg/kg	87.3	22	119	65.6	38.2	53	65.6	51	25
Organochlorine Pesticides										
4,4-DDE	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
a-BHC	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Aldrin	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
b-BHC	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Chlordane (cis)	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Chlordane (trans)	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0

		A101023.0120.00 (907-917)	319629		A101023.0120.00 (090-101)	A101023.0120.00 (090-101)		A101023.0120.00 (090-101)	319756	
		DSI_TP165_0.3-0.4	DSI-SR2		DSI1.TP121_0.3-0.4	DSI1. BR3		DSI1.TP121_0.3-0.4	DSI1_SR3	
		24 Mar 2023	24 Mar 2023		27 Mar 2023	27 Mar 2023		27 Mar 2023	28 Mar 2023	
		Soil	Soil	RPD	Soil	Soil	RPD	Soil	Soil	RPD
	Unit									
d-BHC	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
DDD	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
DDT	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
DDT+DDE+DDD	mg/kg		<0.1						<0.1	
Dieldrin	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Endosulfan I	mg/kg	<0.20	<0.1	0	<0.20	<0.20	0	<0.20	<0.1	0
Endosulfan II	mg/kg	<0.20	<0.1	0	<0.20	<0.20	0	<0.20	<0.1	0
Endosulfan sulphate	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Endrin	mg/kg	<0.20	<0.1	0	<0.20	<0.20	0	<0.20	<0.1	0
Endrin aldehyde	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Endrin ketone	mg/kg	<0.10			<0.10	<0.10	0	<0.10		
g-BHC (Lindane)	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Heptachlor	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Heptachlor epoxide	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Methoxychlor	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Organophosphorous Pesticides										
Azinophos methyl	mg/kg		<0.1						<0.1	
Bromophos-ethyl	mg/kg		<0.1						<0.1	
Chlorpyrifos	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Chlorpyrifos-methyl	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Diazinon	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Dichlorvos	mg/kg		<0.1						<0.1	
Dimethoate	mg/kg		<0.1						<0.1	
Ethion	mg/kg		<0.1						<0.1	
Ethoprop	mg/kg	<0.10			<0.10	<0.10	0	<0.10		
Fenitrothion	mg/kg		<0.1						<0.1	
Malathion	mg/kg		<0.1						<0.1	
Methyl parathion	mg/kg	<0.10			<0.10	<0.10	0	<0.10		
Ronnel	mg/kg	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
PAH										
Benzo(b+j+k)fluoranthene	mg/kg	<0.30	<0.2	0	<0.30	<0.30	0	<0.30	<0.2	0
Acenaphthene	mg/kg	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Acenaphthylene	mg/kg	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Anthracene	mg/kg	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Benzo(a)anthracene	mg/kg	<0.30	0.3	0	<0.30	<0.30	0	<0.30	<0.1	0
Benzo(a) pyrene	mg/kg	<0.30	0.06	0	<0.30	<0.30	0	<0.30	<0.05	0
Benzo(g,h,i)perylene	mg/kg	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Chrysene	mg/kg	<0.30	0.3	0	<0.30	<0.30	0	<0.30	<0.1	0
Dibenz(a,h)anthracene	mg/kg	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Fluoranthene	mg/kg	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Fluorene	mg/kg	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Naphthalene	mg/kg	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Phenanthrene	mg/kg	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Pyrene	mg/kg	<0.30	0.2	0	<0.30	<0.30	0	<0.30	<0.1	0
PAHs (Sum of positives)	mg/kg	<0.30	0.79	90	<0.30	<0.30	0	<0.30	<0.05	0
PCBs										
Arochlor 1016	mg/kg	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0
Arochlor 1221	mg/kg	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0
Arochlor 1232	mg/kg	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0
Arochlor 1242	mg/kg	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0
Arochlor 1248	mg/kg	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0
Arochlor 1254	mg/kg	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0
Arochlor 1260	mg/kg	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0
PCBs (Sum of total)	mg/kg		<0.1						<0.1	
Pesticides										
DEF	mg/kg	<0.10			<0.10	<0.10	0	<0.10		
Parathion	mg/kg		<0.1						<0.1	
TPH										
C6-C9 Fraction	mg/kg	<25	<25	0	<25	<25	0	<25	<25	0
C10-C14 Fraction	mg/kg	<50	<50	0	<50	<50	0	<50	<50	0
C15-C28 Fraction	mg/kg	<100	<100	0	<100	<100	0	<100	<100	0
C29-C36 Fraction	mg/kg	<100	<100	0	<100	<100	0	<100	<100	0
C10-C36 Fraction (Sum)	mg/kg	<100	<50	0	<100	<100	0	<100	<50	0

*RPDs have only been considered where a concentration

**Elevated RPDs are highlighted as per QAQC Profile sett

***Interlab Duplicates are matched on a per compound b

Appendix V – Test Pit Logs

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TEST PIT NUMBER TP113

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296328.87 m N 6253854.67 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grain, dark brown with some greysmall sub-angular gravels, organic rootlets	M	L	0.9		
										TP113 0.2-0.3	
			0.5		CL	**Natural**: CLAY: medium plasticity, orange and brown, with red mottling, some rootlets	M	St		TP113 0.5-0.6	
			1.0			Test pit TP113 terminated at 0.8m					

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TEST PIT NUMBER TP114

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES**
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, with sub-angular gravels and rootlets	M	L	0.7		
			0.5		CL	**Natural**: CLAY: medium plasticity, orange and brown, with red mottling, some rootlets	M	St			
			1.0			Test pit TP114 terminated at 0.9m					

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TEST PIT NUMBER TP115

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** ---
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, dark brown, some sub-angular gravels and rootlets	M	L		TP115 0.2-0.3	
			0.5		CL	**Natural**: CLAY: medium plasticity, orange and brown, with red mottling, some rootlets	M	St	0.9		
			1.0			Test pit TP115 terminated at 0.7m					

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TEST PIT NUMBER TP116

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES**
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, with sub-angular gravels and rootlets	M	L	0.3		
					CL	**Natural**: CLAY: medium plasticity, orange and brown, with red mottling, some rootlets	M	F			
			0.5								
						Test pit TP116 terminated at 0.6m					
			1.0								

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TEST PIT NUMBER TP117

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES**
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, with sub-angular gravels, some rootlets	M	L	0.5	TP117 0.0-0.1	
					CL	**Natural**: CLAY: medium plasticity, orange and brown, with red mottling, some rootlets	M	St			
			0.5			Test pit TP117 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP118

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES**
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, with sub-angular gravels, some rootlets	M	L	0.7		
			0.5		CL	**Natural**: CLAY: medium plasticity, orange and brown with red mottling, some rootlets	M	L			
			1.0			Test pit TP118 terminated at 0.7m					

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TEST PIT NUMBER TP119

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296364.66 m N 6253638.88 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, some sub-angular gravels rootlets	M	L	0.9	TP119 0.1-0.3	
			0.5		CL	**Natural**: CLAY: low to medium plasticity, red and orange	M	St		TP119 0.6-0.7	
			1.0			Test pit TP119 terminated at 1m					
			1.5								

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TEST PIT NUMBER TP120

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296364.66 m N 6253638.88 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill**: Gravelly SAND: coarse grained, some sub-angular gravels and rootlets	M	L	0.6		
			1.0		CL	**Natural**: CLAY: medium plasticity, orange and brown with red mottling, some rootlets	M	F			
			1.5			Test pit TP120 terminated at 1.1m					
			2.0								

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TEST PIT NUMBER TP121

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296348.00 m N 6253624.87 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, some sub-angular gravels and rootlets	M	L			
						Fill: Gravelly SAND: Coarse grain, orange and brown, small sub-angular gravels with clay inclusions	M	L	0.7	TP121 0.3-0.4	
			0.5								
			1.0		CL	**Natural**: CLAY: low to medium plasticity, red and orange	M	St			
						Test pit TP121 terminated at 1.2m					
			1.5								
			2.0								

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TEST PIT NUMBER TP122

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** ---
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES ---

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly CLAY: medium plasticit,y brown to dark brown, sub-angular gravels, rootlets	M	L			
					CL	**Natural**: CLAY: medium plasticity, red, trace rootlets	M	L	0.8		
			0.5			Test pit TP122 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP123

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 296358.36 m N 6253560.09 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, medium to dark brown, some sub-angular gravels and rootlets	D	L		TP123 0.3-0.4	
			0.5			**Natural**: SHALE: moderately weathered light brown	M	St	0.4		
			1.0			Test pit TP123 terminated at 0.7m					

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TEST PIT NUMBER TP124

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** ---
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES ---

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill**: Gravelly SAND: coarse grained, medium to dark brown, some sub-angular gravels and rootlets	M	L	0.6		
			1.0			Test pit TP124 terminated at 0.5m					

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TEST PIT NUMBER TP125

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296366.27 m N 6253483.53 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, trace sub-rounded gravels, high presence of rootlets.	M	St		TP125 0.0-0.2	Moderate hydrocarbon odour noted. FM: Steel wire, plastic, ceramic tiles.
			0.5			**Fill**: Silty CLAY: medium to high plasticity, brown to dark grey, trace rootlets	M	MD	0.7		
			1.0								
					CL	**Natural**: CLAY: low to medium plasticity, yellow to brown	M	St	0.6	TP125 1.4-1.5	
			1.5								
										TP125 1.8-1.9	
			2.0			Test pit TP125 terminated at 2m					
			2.5								

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TEST PIT NUMBER TP126

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 296360.46 m N 6253451.65 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill**: Gravelly SAND: coarse grained, large sub-angular well graded gravels and cobbles, high presence of rootlets.	D	MD			
			1.0			Test pit TP126 terminated at 0.9m					

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TEST PIT NUMBER TP127

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296358.85 m N 6253417.81 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse-grained, gap graded sub-angular gravels and cobbles, high presence of rootlets.	D	MD	0.5	TP127 0.2-0.3	
			0.5			**Natural**: SHALE: brown to dark brown moderately weathered	M	F		TP127 0.5-0.6	
			1.0			Test pit TP127 terminated at 0.7m					

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TEST PIT NUMBER TP128

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296362.34 m N 6253384.97 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, brown to dark brown with sub-angular gravels and high presence of rootlets.	M	MD	0.4		
			0.5		CL	**Natural**: CLAY: moderate to high plasticity, yellow to brown, trace rootlets.	M	MD			
			1.0			Test pit TP128 terminated at 0.65m					

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TEST PIT NUMBER TP129

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296371.47 m N 6253359.48 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**FILL**: Gravelly SAND: medium to coarse grained, with sub-angular gravels, high presence of rootlets, trace low plasticity clay fragments.	D	MD	0.6	TP129 0.1-0.2	
						Natural: SHALE: yellow to brown moderately weathered.	M	MD	0.9		
			0.5			Test pit TP129 terminated at 0.4m					
			1.0								

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TEST PIT NUMBER TP130

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** ---
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES ---

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, well graded with medium sub-angular gravels, trace low plasticity clay fragments and rootlets.	M	St			
			0.5		CL	**Natural**: CLAY: moderate to high plasticity, red with orange with brown mottling, trace rootlets.	M		0.6		
			1.0			Test pit TP130 terminated at 0.6m					

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TEST PIT NUMBER TP131

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296364.64 m N 6253290.21 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, brown to dark brown, trace sub-rounded gravels, and low plasticity clay fragments.	M	MD	0.5		
										TP131 0.1-0.2	
					CL	**Natural**: CLAY: moderate plasticity, red to light brown with slight grey mottling trace rootlets.	M	MD			
			0.5								
						Test pit TP131 terminated at 0.6m					
			1.0								
			1.5								
			2.0								

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TEST PIT NUMBER TP132

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296380.07 m N 6253261.10 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**FILL**: Gravelly SAND: coarse grained, well graded, red to brown, sub-angular gravels and cobbles.	M	MD	0.5		
			0.5			**FILL**: Gravelly SAND: coarse grained, well graded, red to brown, sub-angular gravels and cobbles.	M	St	0.6		
			1.0								
			1.5								
						Test pit TP132 terminated at 1.7m					
			2.0								

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Telephone: 1300976922

TEST PIT NUMBER TP133

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296381.33 m N 6253214.47 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**FILL**: Gravelly SAND: Coarse-grained, well graded, with sub-angular gravels cobbles and sandstone boulders.	M	MD	0.7	TP133 0.1-0.2	
			0.5			**FILL**: Gravelly SAND: Coarse-grained, well graded, with sub-angular gravels cobbles and sandstone boulders.	M	St	0.4	TP133 0.9-1.0	
			1.0								

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TEST PIT NUMBER TP133

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296381.33 m N 6253214.47 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**FILL**: Gravelly SAND: Coarse-grained, well graded, with sub-angular gravels cobbles and sandstone boulders. *(continued)*	M	St			
			1.5			Test pit TP133 terminated at 1.7m					
			2.0								

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TEST PIT NUMBER TP134

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 296365.64 m N 6253194.18 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, light brown, sub-angular gravels and cobbles.	M	MD	0.6		
			0.5		CL	**Natural**: CLAY: low to moderate plasticity, red to brown with slight orange mottling, trace rootlets.	M	MD	0.7		
			1.0			Test pit TP134 terminated at 0.8m					

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TEST PIT NUMBER TP135

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296367.10 m N 6253154.90 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, brown to dark brown, trace sub-rounded gravels.	M	MD	0.6	TP135 0.1-0.2	
					CL	**Natural**: CLAY: low to medium plasticity, yellow to light brown with grey mottling, trace rootlets.	M	St			
			0.5							TP135 0.5-0.6	
						Test pit TP135 terminated at 0.8m					
			1.0								

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TEST PIT NUMBER TP136

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296384.96 m N 6253133.02 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly CLAY: meidum plasticity, brown, sub-angular gravels	M	MD	0.8		
					CL	**Natural**: CLAY: medium plasticity, orange and grey, trace rootlets	M	MD	0.4		
			0.5			Test pit TP136 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP137

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296383.70 m N 6253093.19 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, brown to dark brown, small sub-angular gravels, trace moderate plasticity clay fragments, rootlets	M	F		TP137 0.0-0.1FC	FM: Ceramic tiles
					CL	**Natural**: CLAY: medium to high plasticity, light grey with red mottling, trace rootlets	M	MD	0.9		
			0.5								
						Test pit TP137 terminated at 0.6m					
			1.0								

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TEST PIT NUMBER TP138

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296370.81 m N 6253052.70 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Natural**: SHALE: medium plasticity, light grey with orange mottling, highly weathered	M	MD	0.7		
			0.5			Test pit TP138 terminated at 0.3m					
			1.0								

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TEST PIT NUMBER TP139

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296363.12 m N 6253035.30 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Natural**: SHALE: medium plasticity, light grey with orange mottling, highly weathered	M	St	1.3	TP139 0.2-0.3	
			0.5			Test pit TP139 terminated at 0.6m					
			1.0								

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TEST PIT NUMBER TP140

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296370.67 m N 6252994.62 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Clayey, Gravelly SAND: medium to coarse grained sand, dark brown, medium plasticity clay	M	MD			
					CL	**Natural**: CLAY: medium plasticity, red to brown with orange mottling, trace rootlets	M	MD	1.2		
			0.5			Test pit TP140 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP141

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296360.93 m N 6252965.17 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill**: Gravelly SAND: coarse grained, grey to dark brown, large angular gravels and cobbles, trace sandstone fines.	M	F	0.3	TP141 0.2-0.3	
			1.0			Test pit TP141 terminated at 0.5m					

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TEST PIT NUMBER TP142

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296206.34 m N 6252946.30 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, brown, trace low plasticity clay fragments	M	MD			
			0.5			**Natural**: SHALE: low plasticity, light grey with some red and orange mottling	M	MD			
			1.0			Test pit TP142 terminated at 0.6m					
			1.5								

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TEST PIT NUMBER TP143

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296343.87 m N 6252913.03 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill**: Silty SAND: medium to coarse grained sand, brown, rootlets	M	St		TP143 0.3-0.4	
			1.0			**Natural**: SHALE: yellow to brown, moderately weather, red and brown clays with some grey mottling	M	MD		TP143 0.8-0.9	

Test pit TP143 terminated at 0.7m

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TEST PIT NUMBER TP144

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 296335.53 m N 6252883.66 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**FILL**: Gravelly SAND: coarse grained, grey to dark brown, large angular gravels and cobbles, trace sandstone fines.	M	F			
			0.5		CL	**Natural**: CLAY: moderate to high plasticity, red to brown with slight orange mottling, trace rootlets	M	MD	1.1		
			1.0			Test pit TP144 terminated at 0.7m					

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TEST PIT NUMBER TP145

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296323.24 m N 86252842.83 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, with sub-angular gravels, rootlets, trace low plasticity mottled grey clay fragments.	M	MD		TP145 0.0-0.1	
			0.5			**Natural**: SHALE: low to medium plasticity, red to brown with grey mottling, trace weathered shale fragments	M	MD	1.3		
						Test pit TP145 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP146

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296307.15 m N 6252823.00 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, brown to dark brown, some sub-angular gravels, trace rootlets	M	F	0.1		
					CL	**Natural**: CLAY: low to moderate plasticity, orange to brown with grey and red mottling, trace organics and rootlets	M	St	0.6		
			0.5								
						Test pit TP146 terminated at 0.6m					
			1.0								

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TEST PIT NUMBER TP147

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296300.35 m N 6252781.75 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, sub-angular gravels and cobbles, trace low plasticity clay fragments.	D	MD	0.4	TP147 0.0-0.1	
					CL	**Natural**: CLAY: low to moderate plasticity, red to brown, some orange mottling, trace rootlets	M	MD			
			0.5			Test pit TP147 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP148

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296304.39 m N 6252762.01 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly CLAY: medium to high plasticity, dark brown, some sub-angular gravels, rootlets	M	MD	1.1		
					CL	**Natural**: CLAY: low to medium plasticity, red with grey mottling, trace rootlets	M	MD	0.4		
			0.5			Test pit TP148 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP149

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 295821.26 m N 6250979.42 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Clayey Gravelly CLAY: medium to coarse grained, brown to dark brown, sub-rounded gravels and cobbles, low plasticity clay fragments, high presence of rootlets.	M	MD	0.4	TP149 0.1-0.2	
					CL	**Natural**: CLAY: low to medium plasticity, red to brown with slight grey and orange mottling, trace rootlets	M	St		TP149 0.4-0.5	
			0.5			Test pit TP149 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP150

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296264.00 m N 6252676.00 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium grained, trace sub-angular gravels and cobbles, high presence of rootlets.	M	MD	0.2		
					CL	**Natural**: CLAY: low to medium plasticity, red to brown with slight grey mottling, trace rootlets.	M	MD			
			0.5			Test pit TP150 terminated at 0.4m					
			1.0								

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TEST PIT NUMBER TP151

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296245.35 m N 6252631.70 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, sub-angular gravels, trace low plasticity clay fragment.	M	F	0.3	TP151 0.0-0.2	
					CL	**Natural**: CLAY: low to medium plasticity, red to brown with slight grey mottling, trace rootlets.	M	MD		TP151 0.3-0.4	
			0.5			Test pit TP151 terminated at 0.4m					
			1.0								

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TEST PIT NUMBER TP152

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296244.33 m N 6252599.02 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, sub-angular gravels, rootlets.	M	St	0.4		
					CL	**Natural**: CLAY: low to moderate plasticity, light grey with orange and red mottling, trace rootlets.	M	MD	0.2		
			0.5			Test pit TP152 terminated at 0.3m					
			1.0								
			1.5								
			2.0								

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TEST PIT NUMBER TP153

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296234.80 m N 6252571.15 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, trace sub-rounded gravels, high presence of decaying organics	M	MD		TP153 0.1-0.2	Strong organic odour noted.
			0.5		CL	**Natural**: CLAY: low to moderate plasticity, grey with orange and red mottling, trace rootlets.	M	MD			
			1.0			Test pit TP153 terminated at 0.5m					

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TEST PIT NUMBER TP154

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296219.42 m N 6252546.27 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, sub-angular gravels and cobbles, high presence of rootlets.	M	MD			
					CL	**Natural**: CLAY: low to moderate plasticity, light grey to brown with orange and red mottling, trace rootlets.	M	St	0.6		
			0.5								
						Test pit TP154 terminated at 0.6m					
			1.0								

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TEST PIT NUMBER TP155

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296199.90 m N 6252520.84 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, brown to dark brown, sub-angular gravels, rootlets.	M	F		TP155 0.0-0.1	
					CL	**Natural**: CLAY: low to medium plasticity, red with slight grey mottling, rootlets.	M	St			
			0.5			Test pit TP155 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP156

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296194.03 m N 6252489.63 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Clayey Gravelly SAND: medium to coarse grained, brown to dark brown, sub-angular gravels, low plasticity clay fragments.	M	St			
					CL	**Natural**: CLAY: low to medium plasticity, light grey with orange and red mottling, trace rootlets.	M	MD			
			0.5			Test pit TP156 terminated at 0.4m					
			1.0								

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TEST PIT NUMBER TP157

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296175.57 m N 6252465.96 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium plasticity, dark brown, sub-angular gravels, rootlets	M	MD			
										TP157 0.1-0.2	FM: Terracotta tiles.
			0.5		CL	**Natural**: CLAY: medium to high plasticity, grey with light red mottling, trace rootlets	M	F			
										TP157 0.6-0.7	
			1.0			Test pit TP157 terminated at 0.7m					

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TEST PIT NUMBER TP158

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296147.18 m N 6252449.82 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, light brown to brown, with sub-angular gravels and cobbles, trace rootlets	M	F			
			0.5		CL	**Natural**: CLAY: low to medium plasticity, light greywith orange and red mottling, trace rootlets, weathered shale fragments	M	St			
			1.0			Test pit TP158 terminated at 0.7m					

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TEST PIT NUMBER TP159

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296132.33 m N 625419.76 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly CLAY: medium plasticity, brown, sub-angular gravels and cobbles, rootlets	M	L		TP159 0.3-0.4	
			0.5		CL	**Natural**: CLAY: moderate plasticity, red with light grey mottling, trace shale and rootlets	M	St		TP159 0.6-0.7	
			1.0			Test pit TP159 terminated at 0.7m					

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TEST PIT NUMBER TP160

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 296125.67 m N 6252389.17 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill**: Gravelly SAND: coarse grained, brown, with medium to lagre angular to sub-angular gravels, with rootlets	M	L			
			1.0			Test pit TP160 terminated at 0.7m					

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TEST PIT NUMBER TP161

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296119.65 m N 6252359.70 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly CLAY: medium plasticity, brown, sub-angular gravels, rootlets	M	F			
										TP161 0.1-0.2	
			0.5		CL	**Natural**: CLAY: medium plasticity, grey with slight red mottling, trace rootlets	M	MD			
						Test pit TP161 terminated at 0.6m					
			1.0								

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TEST PIT NUMBER TP162

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296098.11 m N 6252336.04 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly CLAY: medium plasticity, dark brown, small to medium sub-angular gravels, trace rootlets	M	L			FM: Geotextile fabric.
			0.5		CL	**Natural**: CLAY: low plasticity, light grey to brown, with slight red mottling, trace weathered shale	D	MD			
			1.0			Test pit TP162 terminated at 0.6m					

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TEST PIT NUMBER TP163

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296097.59 m N 6252300.62 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, medium brown, sub-angular gravels, trace rootlets	M	St		TP163 0.0-0.1	
						Natural: SHALE: light grey to brown, moderately weathered	D	D			
			0.5			Test pit TP163 terminated at 0.3m					
			1.0								

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TEST PIT NUMBER TP164

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296104.32 m N 625266.64 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill**: Clayey Gravelly SAND: medium to coarse grained, sub angular gravels, brown, with rootlets	M	L			
					CL	**Natural**: CLAY: low to moderate plasticity, brown with orange and grey mottling, traces of moderately weathered shale and trace rootlets	M	MD			
			1.0			Test pit TP164 terminated at 0.9m					

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TEST PIT NUMBER TP165

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296094.23 m N 6252233.63 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.0			**Fill**: Gravelly SAND: coarse grained, brown, with medium to lagre angular to sub-angular gravels, with rootlets	M	F		TP165 0.3-0.4	FM: Concrete.
			0.5			**Fill**: Gravelly SAND: medium to coarse grain, medium brown, medium angular gravels, clay and shale inclusions with trace rootlets	M	St		TP165 1.0-1.1	
			1.0							TP165 1.6-1.7	
			1.5								
			2.0			Test pit TP165 terminated at 1.7m					

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TEST PIT NUMBER TP166

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 24/3/23 **COMPLETED** 24/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296092.12 m N 625206.83 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** SO **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, medium brown, with sub-angular gravels, trace rootlets	M	MD			
					CL	**Natural**: CLAY: low to medium plasticity, red to brown, slight grey and orange mottling, trace rootlets.	M	MD			
			0.5			Test pit TP166 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP167

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296087.12 m N 6252152.21 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, small sub-angular gravels, some darker organic stained rootlets	M	St		TP167 0.0-0.2	
					CL	**Natural**: CLAY: moderate to light plasticity, light grey with red mottling, some weathered shale fragments	M				
			0.5							TP167 0.4-0.5	
						Test pit TP167 terminated at 0.6m					
			1.0								

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TEST PIT NUMBER TP168

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23
R.L. SURFACE ---
DATUM ---
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 296092.17 m N 6252125.05 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium grained, with rootlets, trace sub-angular gravels and cobbles	M	F			
						Fill: Gravelly SAND: coarse grained, with sub-angular gravels, trace rootlets	M	MD			
			0.5			Test pit TP168 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP169

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296088.85 m N 6252078.64 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E					CL	**FILL**: Gravelly SAND coarse grain small angular to sub angular gravels medium brown organic rootlets	M	MD		TP169 0.0-0.2	
					CL	**Natural**: CLAY: medium to high plasticity, light grey with red and orange mottling	M	D			
			0.5								
						Test pit TP169 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP170

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296077.63 m N 6252049.02 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, medium brown, some sub-angular gravels, trace rootlets	M	St			
			0.5		CL	**Natural**: CLAY: low to medium plasticity, red to brown, some grey mottling, trace rootlets.	M	MD			
			1.0			Test pit TP170 terminated at 0.6m					

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TEST PIT NUMBER TP171

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296076.43 m N 6252017.54 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grain, small sub angular gravels, brown, trace rootlets	M	MD		TP171 0.2-0.3	
			0.5		CL	**Natural**: CLAY: medium to high plasticity, light grey with red and orange mottling	M	D			
			1.0			Test pit TP171 terminated at 0.7m					

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TEST PIT NUMBER TP172

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296084.30 m N 6251996.07 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, sub-angular gravels, trace low plasticity clay fragments.	M	F			
					CL	**Natural**: CLAY: low to medium plasticity, red to brown, slight grey mottling, trace rootlets.	M	MD			
			0.5			Test pit TP172 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP173

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23
R.L. SURFACE ---
DATUM ---
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 296083.96 m N 6251961.84 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, medium brown, some sub-angular gravels, trace rootlets	M	MD		TP173 0.0-0.2	
			0.5		CL	**Natural**: CLAY: medium plasticity, light brown to red with light grey mottling, trace rootlets	M	MD		TP173 0.5-0.7	
			1.0			Test pit TP173 terminated at 0.7m					

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TEST PIT NUMBER TP174

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296072.26 m N 6251931.27 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: medium to coarse grained, some sub angular gravels, trace rootlets.	M	MD			
					CL	**Natural**: CLAY: medium plasticity, light brown to red with light grey mottling, trace rootlets	M	MD			
			0.5			Test pit TP174 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP175

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296068.26 m N 6251900.05 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, medium brown, with sub-angular gravels, trace rootlets, clay fragments	M	MD		TP175 0.0-0.2	
			0.5			**Fill**:Silty LOAM: low plasticity, fine grain, light grey to brown, organic rootlets	M	MD		TP175 0.4-0.6	
					CL	**Natural**: CLAY: low plasticity, orange to red with yellow mottling,	D	D		TP175 0.7-0.9	
			1.0			Test pit TP175 terminated at 0.9m					

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TEST PIT NUMBER TP176

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296076.97 m N 6251855.18 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, light yellow to light brown, trace sub-rounded gravels and rootlets.	M	F			
					CL	**Natural**: CLAY: low to moderate plasticity, orange to red with grey mottling, trace rootlets	M	MD			
			0.5			Test pit TP176 terminated at 0.5m					
			1.0								

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TEST PIT NUMBER TP177

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296073.85 m N 6251821.27 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E					CL	**Fill**: Gravelly SAND: coarse grained, light yellow to light brown, trace sub-rounded gravels and rootlets.	M	MD		TP177 0.0-0.2	
					CL	**Natural**: CLAY: low to moderate plasticity, orange to red with light grey mottling, red shale inclusions.					
			0.5								
						Test pit TP177 terminated at 0.6m					
			1.0								

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TEST PIT NUMBER TP178

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296061.11 m N 6251789.55 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Silty SAND: medium to coarse grained, trace sub-rounded gravels	M	St			FM: Asphalt, roadbase (DGB).
						Fill: Gravelly SAND: coarse grained, brown, some sub-angular gravels, trace rootlets	M	MD			
			0.5			Test pit TP178 terminated at 0.4m					
			1.0								

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TEST PIT NUMBER TP179

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296053.35 m N 6251719.68 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grain, sub-angular gravels and cobbles, light brown to brown, trace rootlets	M	MD		TP179 0.0-0.2	
					CL	**Natural**: CLAY: medium plasticity, light grey with red and orange mottling, trace rootlets	M	MD			
			0.5			Test pit TP179 terminated at 0.4m					
			1.0								

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TEST PIT NUMBER TP180

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296061.24 m N 6251678.42 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill**: Silty SAND: medium to coarse grained, light grey to brown, with rootlets	M	St		TP180 0.0-0.2FC	
			1.0			Test pit TP180 terminated at 0.6m					

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TEST PIT NUMBER TP181

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296053.80 m N 6251648.50 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, brown, with sub-angular gravels, trace rootlets	M	MD		TP181 0.2-0.3	
			0.5		CL	**Natural**: CLAY: medium to high plasticity, yellow with grey mottling, brown shale inclusions	M	MD		TP181 0.5-0.6	
			1.0			Test pit TP181 terminated at 0.6m					

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TEST PIT NUMBER TP182

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES**
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill**: Gravelly SAND: coarse grained, brown, with sub-angular gravels, trace rootlets	M	F			
			1.0			Test pit TP182 terminated at 0.5m					

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TEST PIT NUMBER TP183

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296040.44 m N 6251575.21 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly CLAY: low to medium plasticity with small sub-rounded gravels, light brown with dark grey staining, trace rootlets	M	MD		TP183 0.0-0.2	
			0.5		CL	**Natural**: CLAY: medium plasticity, dark red with light grey mottling	M	MD			
			1.0			Test pit TP183 terminated at 0.6m					

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TEST PIT NUMBER TP184

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296044.27 m N 6251537.69 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** CN **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill**: Gravelly SAND: coarse grained, brown, some sub-angular gravels, trace rootlets	M	St			
			1.0			Test pit TP184 terminated at 0.5m					

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TEST PIT NUMBER TP185

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296203.97 m N 6251495.47 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, dark brown, some angular and sub-angular gravels	M	MD		TP185 0.0-0.2	
			0.5		CL	**Natural**: CLAY: medium to high plasticity, grey with some red mottling, trace weathered shale fragments	M	MD			
			1.0			Test pit TP185 terminated at 0.6m					

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TEST PIT NUMBER TP186

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296141.33 m N 6251479.15 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, dark brown, some angular and sub-angular gravels	M	MD			
			0.5			Test pit TP186 terminated at 0.4m					
			1.0								

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TEST PIT NUMBER TP187

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296097.67 m N 6251487.44 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, brown to dark brown, sub-angular gravels, some rootlets.	M	MD		TP187 0.2-0.3	
			0.5		CL	**Natural**: CLAY: medium plasticity, light grey with red and orange mottling, trace rootlets	M	MD			
			1.0			Test pit TP187 terminated at 0.6m					

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TEST PIT NUMBER TP188

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296043.53 m N 6251500.57 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill**: Gravelly SAND: coarse grained, light brown to brown, sub-angular gravels and cobbles, trace rootlets	M	St			
			1.0			Test pit TP188 terminated at 0.6m					

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TEST PIT NUMBER TP189

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 296000.81 m N 6251513.86 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, brown, sub-angular gravels, some rootlets	M	MD		TP189 0.2-0.3	
			0.5		CL	**Natural**: CLAY: low to medium plasticity, red with slight grey mottling, some rootlets.	M	,			
			1.0			Test pit TP189 terminated at 0.6m					

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TEST PIT NUMBER TP190

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 295960.01 m N 6251526.47 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, dark grey, angular gravels, with weathered shale fragments	M	St			
			0.5			Test pit TP190 terminated at 0.4m					
			1.0								

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Telephone: 1300976922

TEST PIT NUMBER TP191

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 295917.25 m N 62515123.50 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Clayey Gravelly SAND: medium to coarse grained, brown to dark brown, with sub-angular gravels, trace clay fines	M	MD		TP191 0.0-0.2FC	
										TP191 0.2-0.3	
			0.5		CL	**Natural**: CLAY: low to medium plasticity, light grey to brown with slight yellow mottling, with weathered shale fragments	M	St			
										TP191 0.5-0.6	
			1.0			Test pit TP191 terminated at 0.6m					

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TEST PIT NUMBER TP192

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295884.74 m N 6251518.57 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill**: Gravelly SAND: medium to coarse grained, light yellow to light brown, trace sub-angular gravels and cobbles and sandstone fines.	M	MD			FM: Bituminous gravels.
			1.0			Test pit TP192 terminated at 0.5m					

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Telephone: 1300976922

TEST PIT NUMBER TP193

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 295843.21 m N 6251525.24 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse grained, brown, some sub-angular gravels, trace rootlets	M	St		TP193 0.2-0.3	
			0.5		CL	**Natural**: CLAY: medium to high plasticity, brown, yellow with grey mottling, some weathered shale fragments	M	MD			
			1.0			Test pit TP193 terminated at 0.6m					

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Telephone: 1300976922

TEST PIT NUMBER TP194

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 295829.78 m N 6251529.75 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly SAND: coarse, sub angular gravels and pebbles, brown with organics	M	F			
					CL	**Natural**: CLAY: medium to high plasticity, red with grey mottling	M	MD			FM: Plastic, asphalt, ceramics.
			0.5			Test pit TP194 terminated at 0.5m					
			1.0								

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Telephone: 1300976922

TEST PIT NUMBER TP195

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** --- **DATUM** ---
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES** E 295781.73 m N 6251528.92 m
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly CLAY: Low plasticity, light brown, sub-rounded gravels and pebbles, trace asphalt.	M	F		TP195 0.0-0.2	FM: Asphalt.
			0.5		CL	**Natural**: CLAY: medium to high plasticity, red with grey mottling	M	MD			
			1.0			Test pit TP195 terminated at 0.6m					

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TEST PIT NUMBER TP196

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Aldington and Abbotts Road, Kemps Creek, NSW

DATE STARTED 23/3/23 **COMPLETED** 23/3/23 **R.L. SURFACE** **DATUM**
EXCAVATION CONTRACTOR ANC Foster **SLOPE** --- **BEARING** ---
EQUIPMENT 8 tonne excavator **COORDINATES**
TEST PIT SIZE 1.2 x 0.5 **LOGGED BY** MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill**: Gravelly CLAY: Low plasticity, light brown, sub-rounded gravels and pebbles, trace asphalt.	M	F			FM: Asphalt.
					CL	**Natural**: CLAY: medium to high plasticity, red with grey mottling	M	MD			
			0.5			Test pit TP196 terminated at 0.5m					
			1.0								

Appendix VI – Analytical Reports and Chain of Custody Documentation

Batch Number : 2301137

Report Number : A101023.0120.00 (644-667)

Sydney Laboratory Services

A division of A. D. Envirotech Australia Pty Ltd
A.C.N. 093 452 950
Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Accreditation No.14664
Accredited for compliance with ISO/IEC 17025 - Testing.

This certificate of analysis contains General Comments and Analytical Results. Quality Control Report and Laboratory Quality Acceptance Criteria have been issued separately.

This report supersedes any previous report(s) with this reference. This document shall not be reproduced, except in full.

This report has been electronically signed by authorised signatories below.

Authorised By

Kaiyu Li

General Comments

Samples are analysed on as received basis. Sampling is not covered by NATA accreditation.

Where moisture determination has been performed, results are reported on dry weight basis.

Where the PQL of reported result differs from standard PQL, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Samples were analysed within holding time described by laboratory internal procedures if not stated otherwise. If samples delivered do not meet required analytical criteria, results will be marked with ^.

However surrogate standards are added to samples, results are not corrected for standards recoveries.

Analysis of VOC in water samples are performed on unfiltered waters (as received) spiked with surrogates and injection standards only.

SLS is responsible for all the information in the report, except that provided by the customer.

All sampling information included in the report has been provided by customer.

Information provided by the customer can affect the validity of the results.

Certificate of Analysis

Contact:	Andrew Hunt	**Date Reported:**	31/03/2023
Customer:	ADE Consulting Group	**No. of Samples:**	22
Address:	Unit 6 7 Millennium Court Silverwater NSW	**Date Received:**	24/03/2023
		Date of Analysis:	24/03/2023

Cust Ref: A101023.0120.00 0.003 L01

Glossary:

*NATA accreditation does not cover the performance of this service
ND-not detected,
NT-not tested
INS-Insufficient material to perform the test
LCS-Laboratory Control Sample
RPD-Relative Percent Difference
N/A-Not Applicable
< less than
> greater than
PQL- Practical Quantitation Limit
^Analytical result might be compromised due to sample condition or holding time requirements
Reaction rate 1 = Slight
Reaction rate 2 = Moderate
Reaction rate 3 = High
Reaction rate 4 = Vigorous

Certificate of Analysis

	Sample ID:	2023007644	2023007645	2023007646	2023007647	2023007649	2023007650	2023007651	2023007652	2023007653	2023007654	2023007655
	Sample Name	DSI_TP185_0-0.2	DSI_TP187_0.2-0.3	DSI_TP181_0.2-0.3	DSI_TP181_0.5-0.6	DSI_TP179_0-0.2	DSI_TP177_0-0.2	DSI_TP175_0-0.2	DSI_TP175_0.4-0.6	DSI_TP175_0.7-0.9	DSI_TP173_0-0.2	DSI_TP173_0.5-0.7
Parameter	Units	PQL	Sample Date: 23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023
ESA-P-ORG7 & ORG8												
Benzene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m.p Xylene	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o Xylene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sum of BTEX	mg/kg	2	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Total Xylenes	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Fluorobenzene (Surr.)	%		96	96	95	95	98	101	100	100	93	94	99
C6-C10	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C10 minus BTEX	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C9	mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
ESA-MP-01,ICP-01												
Arsenic	mg/kg	5	<5.0	10.6	<5.0	<5.0	<5.0	5.4	5.2	10.2	13.4	7.5	<5.0
Cadmium	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chromium	mg/kg	1	34.1	12.9	10.4	1.9	13.2	27.7	20.2	32.7	20.5	20.3	7.9
Copper	mg/kg	5	18.0	21.0	13.6	17.8	27.0	25.8	25.5	7.1	14.0	38.7	16.3
Lead	mg/kg	5	15.7	20.5	19.8	5.1	17.6	23.2	37.1	27.2	17.1	48.5	11.0
Mercury	mg/kg	0.1	0.55	0.10	0.23	0.13	0.29	0.10	0.12	0.21	0.13	0.12	0.15
Nickel	mg/kg	1	39.5	10.7	11.1	3.9	11.1	24.3	22.0	6.1	7.7	23.6	3.2
Zinc	mg/kg	5	52.3	35.1	48.0	14.6	62.0	57.8	53.4	18.3	21.9	73.5	17.2
ESA-P-12												
% Moisture Content	%		7.6	15.3	6.8	11.8	9.9	8.5	6.4	12.1	15.2	14.4	15.7
ESA-P-ORG(12 - 15)												
Acenaphthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

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	Sample ID:	2023007644	2023007645	2023007646	2023007647	2023007649	2023007650	2023007651	2023007652	2023007653	2023007654	2023007655
	Sample Name	DSI_TP185_0-0.2	DSI_TP187_0.2-0.3	DSI_TP181_0.2-0.3	DSI_TP181_0.5-0.6	DSI_TP179_0-0.2	DSI_TP177_0-0.2	DSI_TP175_0-0.2	DSI_TP175_0.4-0.6	DSI_TP175_0.7-0.9	DSI_TP173_0-0.2	DSI_TP173_0.5-0.7
Parameter	Units	PQL	Sample Date: 23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023
Acenaphthylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chrysene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluorene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Naphthalene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Phenanthrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Sum of Positive PAHs	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Half PQL)	mg/kg	0.3	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Benzo(a)pyrene TEQ (PQL)	mg/kg	0.3	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
p-Terphenyl-d14 (Surr.)	%		87	88	85	93	89	86	74	89	91	92	95
aldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
a-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
b-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
d-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
cis-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
trans-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

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Certificate of Analysis

	Sample ID:	2023007644	2023007645	2023007646	2023007647	2023007649	2023007650	2023007651	2023007652	2023007653	2023007654	2023007655
	Sample Name	DSI_TP185_0-0.2	DSI_TP187_0.2-0.3	DSI_TP181_0.2-0.3	DSI_TP181_0.5-0.6	DSI_TP179_0-0.2	DSI_TP177_0-0.2	DSI_TP175_0-0.2	DSI_TP175_0.4-0.6	DSI_TP175_0.7-0.9	DSI_TP173_0-0.2	DSI_TP173_0.5-0.7
Parameter	Units	PQL	Sample Date: 23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023
4,4'-DDD	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDE	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDT	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
dieldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endosulfan I	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan II	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endrin aldehyde	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin ketone	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methoxychlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
TCMX (Surr.)	%		111	120	124	111	107	105	110	119	112	111	104
chlorpyrifos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
diazinon	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
fenchlorphos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methyl parathion	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
prophos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Aroclor 1016	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1221	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1232	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1242	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

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Certificate of Analysis

	Sample ID:	2023007644	2023007645	2023007646	2023007647	2023007649	2023007650	2023007651	2023007652	2023007653	2023007654	2023007655
	Sample Name	DSI_TP185_0-0.2	DSI_TP187_0.2-0.3	DSI_TP181_0.2-0.3	DSI_TP181_0.5-0.6	DSI_TP179_0-0.2	DSI_TP177_0-0.2	DSI_TP175_0-0.2	DSI_TP175_0.4-0.6	DSI_TP175_0.7-0.9	DSI_TP173_0-0.2	DSI_TP173_0.5-0.7
Parameter	***Units***	***PQL***	Sample Date: 23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023
Aroclor 1248	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1254	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1260	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-fluorobiphenyl (Surr.)	%		103	117	119	109	109	108	111	115	111	111	102

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	Sample ID:	2023007644	2023007645	2023007646	2023007647	2023007649	2023007650	2023007651	2023007652	2023007653	2023007654	2023007655
	Sample Name	DSI_TP185_0-0.2	DSI_TP187_0.2-0.3	DSI_TP181_0.2-0.3	DSI_TP181_0.5-0.6	DSI_TP179_0-0.2	DSI_TP177_0-0.2	DSI_TP175_0-0.2	DSI_TP175_0.4-0.6	DSI_TP175_0.7-0.9	DSI_TP173_0-0.2	DSI_TP173_0.5-0.7
Parameter	Units	PQL	Sample Date: 23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023
ESA-P-ORG16													
PFBA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFPeA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFBS	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFHxA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFPeS	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFHpA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFOA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFHpS	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFOS	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFDA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFUdA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFDoA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFTrDA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFTeDA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFNA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFHxS	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
MPFBA (Surr.)	%		-	-	80	-	-	-	-	-	-	-	-
M3PFBS (Surr.)	%		-	-	83	-	-	-	-	-	-	-	-
MPFOS (Surr.)	%		-	-	105	-	-	-	-	-	-	-	-
MPFHxA (Surr.)	%		-	-	82	-	-	-	-	-	-	-	-
MPFOA (Surr.)	%		-	-	83	-	-	-	-	-	-	-	-
MPFUdA (Surr.)	%		-	-	101	-	-	-	-	-	-	-	-

Certificate of Analysis

	Sample ID:	2023007644	2023007645	2023007646	2023007647	2023007649	2023007650	2023007651	2023007652	2023007653	2023007654	2023007655
	Sample Name	DSI_TP185_0-0.2	DSI_TP187_0.2-0.3	DSI_TP181_0.2-0.3	DSI_TP181_0.5-0.6	DSI_TP179_0-0.2	DSI_TP177_0-0.2	DSI_TP175_0-0.2	DSI_TP175_0.4-0.6	DSI_TP175_0.7-0.9	DSI_TP173_0-0.2	DSI_TP173_0.5-0.7
Parameter	Units	PQL	Sample Date: 23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023
ESA-P-ORG(3,8)												
>C10-C16	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C16-C34	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C34-C40	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C40 (Sum of total)	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C14	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C15-C28	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C29-C36	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C36 (Sum of total)	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100

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Certificate of Analysis

	Sample ID:	2023007656	2023007657	2023007658	2023007659	2023007660	2023007661	2023007662	2023007663	2023007664	2023007665	2023007667
	Sample Name	DSI_TP171_0.2-0.3	DSI_TP169_0-0.2	DSI_TP167_0-0.2	DSI_TP167_0.4-0.5	DSI_TP183_0-0.2	DSI_TP189_0.2-0.3	DSI_TP191_0.2-0.3	DSI_TP191_0.5-0.6	DSI_TP193_0.2-0.3	DSI_TP195_0-0.2	DSI_BR1
Parameter	**Units**	**PQL**	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023
ESA-P-ORG7 & ORG8													
Benzene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m.p Xylene	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o Xylene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sum of BTEX	mg/kg	2	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Total Xylenes	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Fluorobenzene (Surr.)	%		96	97	90	94	97	100	97	99	95	96	100
C6-C10	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C10 minus BTEX	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C9	mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
ESA-MP-01,ICP-01													
Arsenic	mg/kg	5	8.2	10.3	5.4	15.9	7.8	<5.0	<5.0	7.2	6.0	5.5	5.4
Cadmium	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chromium	mg/kg	1	12.3	8.4	15.3	12.9	16.8	10.8	16.3	15.3	37.7	24.0	31.5
Copper	mg/kg	5	38.2	31.1	33.2	34.1	33.3	26.6	40.8	38.3	24.0	24.0	22.1
Lead	mg/kg	5	22.1	16.2	33.2	17.9	57.3	13.3	23.5	15.5	45.2	40.8	18.4
Mercury	mg/kg	0.1	0.11	0.15	0.14	0.11	0.21	0.16	0.12	0.18	0.16	0.16	0.12
Nickel	mg/kg	1	18.3	32.1	21.2	16.8	23.7	7.3	18.3	17.0	21.1	22.1	36.7
Zinc	mg/kg	5	66.9	103.4	81.9	77.5	90.8	39.6	50.6	75.6	55.3	63.2	53.5
ESA-P-12													
% Moisture Content	%		9.8	10.9	15.0	14.2	19.7	11.2	5.1	13.6	5.1	13.0	7.1
ESA-P-ORG(12 - 15)													
Acenaphthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Acenaphthylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

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Certificate of Analysis

	Sample ID:	2023007656	2023007657	2023007658	2023007659	2023007660	2023007661	2023007662	2023007663	2023007664	2023007665	2023007667
	Sample Name	DSI_TP171_0.2-0.3	DSI_TP169_0-0.2	DSI_TP167_0-0.2	DSI_TP167_0.4-0.5	DSI_TP183_0-0.2	DSI_TP189_0.2-0.3	DSI_TP191_0.2-0.3	DSI_TP191_0.5-0.6	DSI_TP193_0.2-0.3	DSI_TP195_0-0.2	DSI_BR1
Parameter	**Units**	**PQL**	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023
Anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chrysene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.73	<0.30	<0.30	<0.30	<0.30
Fluorene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Naphthalene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Phenanthrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.69	<0.30	<0.30	<0.30	<0.30
Sum of Positive PAHs	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	1.42	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Half PQL)	mg/kg	0.3	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Benzo(a)pyrene TEQ (PQL)	mg/kg	0.3	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
p-Terphenyl-d14 (Surr.)	%		97	89	93	94	97	95	83	91	92	91	105
aldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
a-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
b-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
d-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
cis-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
trans-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDD	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

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Certificate of Analysis

	Sample ID:	2023007656	2023007657	2023007658	2023007659	2023007660	2023007661	2023007662	2023007663	2023007664	2023007665	2023007667
	Sample Name	DSI_TP171_0.2-0.3	DSI_TP169_0-0.2	DSI_TP167_0-0.2	DSI_TP167_0.4-0.5	DSI_TP183_0-0.2	DSI_TP189_0.2-0.3	DSI_TP191_0.2-0.3	DSI_TP191_0.5-0.6	DSI_TP193_0.2-0.3	DSI_TP195_0-0.2	DSI_BR1
Parameter	**Units**	**PQL**	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023
4,4'-DDE	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDT	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
dieldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endosulfan I	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan II	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endrin aldehyde	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin ketone	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methoxychlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
TCMX (Surr.)	%		108	109	108	114	109	101	99	100	100	115	99
chlorpyrifos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
diazinon	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
fenchlorphos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methyl parathion	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
prophos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Aroclor 1016	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1221	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1232	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1242	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1248	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Certificate of Analysis

	Sample ID:	2023007656	2023007657	2023007658	2023007659	2023007660	2023007661	2023007662	2023007663	2023007664	2023007665	2023007667
	Sample Name	DSI_TP171_0.2-0.3	DSI_TP169_0-0.2	DSI_TP167_0-0.2	DSI_TP167_0.4-0.5	DSI_TP183_0-0.2	DSI_TP189_0.2-0.3	DSI_TP191_0.2-0.3	DSI_TP191_0.5-0.6	DSI_TP193_0.2-0.3	DSI_TP195_0-0.2	DSI_BR1
Parameter	**Units**	**PQL**	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023
Aroclor 1254	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1260	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-fluorobiphenyl (Surr.)	%		108	107	104	115	109	101	102	105	105	111	104
ESA-P-ORG16													
PFBA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFPeA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFBS	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFHxA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFPeS	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFHpA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFOA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFHpS	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFOS	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFDA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFUdA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFDoA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFTrDA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFTeDA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFNA	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
PFHxS	ug/kg	5	-	-	<5	-	-	-	-	-	-	-	-
MPFBA (Surr.)	%		-	-	88	-	-	-	-	-	-	-	-
M3PFBS (Surr.)	%		-	-	78	-	-	-	-	-	-	-	-
MPFOS (Surr.)	%		-	-	98	-	-	-	-	-	-	-	-
MPFHxA (Surr.)	%		-	-	114	-	-	-	-	-	-	-	-
MPFOA (Surr.)	%		-	-	79	-	-	-	-	-	-	-	-
MPFUdA (Surr.)	%		-	-	85	-	-	-	-	-	-	-	-

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Certificate of Analysis

	Sample ID:	2023007656	2023007657	2023007658	2023007659	2023007660	2023007661	2023007662	2023007663	2023007664	2023007665	2023007667
	Sample Name	DSI_TP171_0.2-0.3	DSI_TP169_0-0.2	DSI_TP167_0-0.2	DSI_TP167_0.4-0.5	DSI_TP183_0-0.2	DSI_TP189_0.2-0.3	DSI_TP191_0.2-0.3	DSI_TP191_0.5-0.6	DSI_TP193_0.2-0.3	DSI_TP195_0-0.2	DSI_BR1
Parameter	**Units**	**PQL**	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023	23/03/2023
ESA-P-ORG(3,8)												
>C10-C16	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C16-C34	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C34-C40	mg/kg	100	<100	<100	<100	<100	<100	<100	120	<100	148	<100	<100
>C10-C40 (Sum of total)	mg/kg	100	<100	<100	<100	<100	<100	<100	120	<100	148	<100	<100
>C10-C14	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C15-C28	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C29-C36	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	121	116	<100
>C10-C36 (Sum of total)	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	121	116	<100

Sydney Laboratory Services

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Accreditation No.14664
Accredited for compliance with ISO/IEC 17025 - Testing.

This Quality Control Report contains results of QAQC samples analysis and the Laboratory Acceptance Criteria.

This report supersedes any previous report(s) with this reference. This document shall not be reproduced, except in full.

This report has been electronically signed by authorised signatories below.

Authorised By

Kaiyu Li

General Comments

Duplicate samples and matrix spike may not be prepared on smaller jobs, however are analysed at frequency. QAQC samples shown within the report as e.g. Batch Blank, Batch Matrix Spike were performed on samples not reported on that Certificate of Analysis.

Blank This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in the same manner as for samples.
Duplicate This is the interlaboratory split of a random sample from the processed batch
Matrix Spike A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class.
Surr. (Surrogate Spike) Surrogates are known additions to each sample, blank and matrix spike or LCS in a batch. Surrogates are chosen as a compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Blank shall be < PQL
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals/PFAS, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits
RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the PQL : No Limit
Results between 10-20 times the PQL : RPD must lie between 0-50%
Results >20 times the PQL : RPD must lie between 0-30%
Surrogate Recoveries : Recoveries must lie between 50-150%

SLS is responsible for all the information in the report, except that provided by the customer.

All sampling information included in the report has been provided by customer.

Information provided by the customer can affect the validity of the results.

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Unit 4/10-11 Millennium Court
Silverwater 2128
Ph: (02) 9648-6669

Quality Control Report

Contact:	Andrew Hunt	**Date Reported:**	31/03/2023
Customer:	ADE Consulting Group	**No. of Samples:**	44
Address:	Unit 6 7 Millennium Court Silverwater NSW	**Date Received:**	24/03/2023
		Date of Analysis:	24/03/2023

Cust Ref: A101023.0120.00 0.003 L01

Glossary:

*NATA accreditation does not cover the performance of this service
ND-not detected,
NT-not tested
INS-Insufficient material to perform the test
LCS-Laboratory Control Sample
RPD-Relative Percent Difference
N/A-Not Applicable
< less than
> greater than
PQL- Practical Quantitation Limit
^Analytical result might be compromised due to sample condition or holding time requirements
Reaction rate 1 = Slight
Reaction rate 2 = Moderate
Reaction rate 3 = High
Reaction rate 4 = Vigorous

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Quality Control Report

	Sample ID:	D202300757201	D202300758301	D202300764502	D202300765502
	Sample Name	SP5-TP2-0.4	SP1-TP1-0.4	DSI_TP187_0.2-0.3	DSI_TP173_0.5-0.7
Parameter	Units / PQL			23/03/2023	23/03/2023
ESA-MP-01,ICP-01					
Arsenic		Pass	Pass	Pass	Pass
Cadmium		Pass	Pass	Pass	Pass
Chromium		Pass	Pass	Pass	Pass
Copper		Pass	Pass	Pass	Pass
Lead		Pass	Pass	Pass	Pass
Mercury		Pass	Pass	Pass	Pass
Nickel		Pass	Pass	Pass	Pass
Zinc		Pass	Pass	Pass	Pass

	Sample ID:	D202300757202	D202300758302	D202300764501	D202300765501
	Sample Name	SP5-TP2-0.4	SP1-TP1-0.4	DSI_TP187_0.2-0.3	DSI_TP173_0.5-0.7
Parameter	Units / PQL			23/03/2023	23/03/2023
ESA-P-ORG7 & ORG8					
Benzene		Pass	Pass	Pass	Pass
Toluene		Pass	Pass	Pass	Pass
Ethylbenzene		Pass	Pass	Pass	Pass
m.p Xylene		Pass	Pass	Pass	Pass
o Xylene		Pass	Pass	Pass	Pass
Fluorobenzene (Surr.)	%	90	92	95	94
C6-C10		Pass	Pass	Pass	Pass
C6-C9		Pass	Pass	Pass	Pass

	Sample ID:	D202300757203	D202300758303	D202300764503	D202300765503
	Sample Name	SP5-TP2-0.4	SP1-TP1-0.4	DSI_TP187_0.2-0.3	DSI_TP173_0.5-0.7
Parameter	Units / PQL			23/03/2023	23/03/2023
ESA-P-ORG(12 - 15)					
Acenaphthene		Pass	Pass	Pass	Pass
Acenaphthylene		Pass	Pass	Pass	Pass
Anthracene		Pass	Pass	Pass	Pass

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Benzo[a]anthracene			Pass	Pass	Pass	Pass
Benzo[a]pyrene			Pass	Pass	Pass	Pass
Benzo[g,h,i]perylene			Pass	Pass	Pass	Pass
Benzo[b,k]fluoranthene			Pass	Pass	Pass	Pass
Chrysene			Pass	Pass	Pass	Pass
Dibenzo[a,h]anthracene			Pass	Pass	Pass	Pass
Fluoranthene			Pass	Pass	Pass	Pass
Fluorene			Pass	Pass	Pass	Pass
Indeno(1,2,3-cd)pyrene			Pass	Pass	Pass	Pass
Naphthalene			Pass	Pass	Pass	Pass
Phenanthrene			Pass	Pass	Pass	Pass
Pyrene			Pass	Pass	Pass	Pass
p-Terphenyl-d14 (Surr.)	%		85	90	86	94
aldrin			Pass	Pass	Pass	Pass
a-BHC			Pass	Pass	Pass	Pass
b-BHC			Pass	Pass	Pass	Pass
d-BHC			Pass	Pass	Pass	Pass
g-BHC (lindane)			Pass	Pass	Pass	Pass
cis-chlordane			Pass	Pass	Pass	Pass
trans-chlordane			Pass	Pass	Pass	Pass
4,4'-DDD			Pass	Pass	Pass	Pass
4,4'-DDE			Pass	Pass	Pass	Pass
4,4'-DDT			Pass	Pass	Pass	Pass
dieldrin			Pass	Pass	Pass	Pass
endosulfan I			Pass	Pass	Pass	Pass
endosulfan II			Pass	Pass	Pass	Pass
endosulfan sulfate			Pass	Pass	Pass	Pass
endrin			Pass	Pass	Pass	Pass
endrin aldehyde			Pass	Pass	Pass	Pass
endrin ketone			Pass	Pass	Pass	Pass
heptachlor			Pass	Pass	Pass	Pass
heptachlor epoxide			Pass	Pass	Pass	Pass

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hexachlorobenzene			Pass	Pass	Pass	Pass
methoxychlor			Pass	Pass	Pass	Pass
TCMX (Surr.)	%		109	103	125	105
chlorpyrifos			Pass	Pass	Pass	Pass
chlorpyrifos methyl			Pass	Pass	Pass	Pass
diazinon			Pass	Pass	Pass	Pass
fenchlorphos			Pass	Pass	Pass	Pass
methyl parathion			Pass	Pass	Pass	Pass
prophos			Pass	Pass	Pass	Pass
tributylphosphorotrithioite			Pass	Pass	Pass	Pass
Aroclor 1016			Pass	Pass	Pass	Pass
Aroclor 1221			Pass	Pass	Pass	Pass
Aroclor 1232			Pass	Pass	Pass	Pass
Aroclor 1242			Pass	Pass	Pass	Pass
Aroclor 1248			Pass	Pass	Pass	Pass
Aroclor 1254			Pass	Pass	Pass	Pass
Aroclor 1260			Pass	Pass	Pass	Pass
2-fluorobiphenyl (Surr.)	%		113	105	117	105
		Sample ID:	**D202300757204**	**D202300758304**	**D202300764504**	**D202300765504**
		Sample Name	**SP5-TP2-0.4**	**SP1-TP1-0.4**	**DSI_TP187_0.2-0.3**	**DSI_TP173_0.5-0.7**
Parameter	***Units***	***PQL***			23/03/2023	23/03/2023
ESA-P-ORG(3,8)						
>C10-C16			Pass	Pass	Pass	Pass
>C16-C34			Pass	Pass	Pass	Pass
>C34-C40			Pass	Pass	Pass	Pass
>C10-C14			Pass	Pass	Pass	Pass
>C15-C28			Pass	Pass	Pass	Pass
>C29-C36			Pass	Pass	Pass	Pass

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	Sample ID:	D202300757701
	Sample Name	SP4-TP1-0.4
Parameter	Units	PQL	Sample Date: 23/03/2023
ESA-P-ORG16			
PFBA			Pass
PFPeA			Pass
PFBS			Pass
PFHxA			Pass
PFPeS			Pass
PFHpA			Pass
PFOA			Pass
PFHpS			Pass
PFOS			Pass
PFDA			Pass
PFUdA			Pass
PFDoA			Pass
PFTrDA			Pass
PFTeDA			Pass
PFNA			Pass
PFHxS			Pass
MPFBA	%		87
M3PFBS	%		130
MPFOS	%		112
MPFHxA	%		82
MPFOA	%		83
MPFUdA	%		80

	Sample ID:	Q2023001640	Q2023001672
	Sample Name		
Parameter	Units	PQL	Metals Blank - Soil	Metals Blank - Soil
ESA-MP-01,ICP-01				
Arsenic	mg/kg	5	<5.0	<5.0

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Cadmium	mg/kg	0.3	<0.30	<0.30
Chromium	mg/kg	1	<1.0	<1.0
Copper	mg/kg	5	<5.0	<5.0
Lead	mg/kg	5	<5.0	<5.0
Mercury	mg/kg	0.1	<0.10	<0.10
Nickel	mg/kg	1	<1.0	<1.0
Zinc	mg/kg	5	<5.0	<5.0
		Sample ID:	**Q2023001641**	**Q2023001673**
		Sample Name		
Parameter	***Units***	***PQL***	Metals Blank Sp-Soil	Metals Blank Sp-Soil
ESA-MP-01,ICP-01				
Arsenic	%		94	70
Cadmium	%		100	76
Chromium	%		98	70
Copper	%		96	70
Lead	%		101	74
Mercury	%		87	88
Nickel	%		100	72
Zinc	%		97	74
		Sample ID:	**Q2023001648**	**Q2023001670**
		Sample Name		
Parameter	***Units***	***PQL***	BTEX Blank - Soil	BTEX Blank - Soil
ESA-P-ORG7 & ORG8				
Benzene	mg/kg	0.5	<0.50	<0.50
Toluene	mg/kg	0.5	<0.50	<0.50
Ethylbenzene	mg/kg	1	<1.0	<1.0
m.p Xylene	mg/kg	2	<2.0	<2.0
o Xylene	mg/kg	1	<1.0	<1.0
C6-C10	mg/kg	35	<35	<35
C6-C9	mg/kg	25	<25	<25

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	Sample ID:	Q2023001649	Q2023001671
	Sample Name		

Parameter	Units	PQL	BTEX Blank Sp-Soil	BTEX Blank Sp-Soil
ESA-P-ORG7 & ORG8				
Benzene	%		126	128
Toluene	%		111	111
Ethylbenzene	%		104	103
m.p Xylene	%		98	96
o Xylene	%		96	95
Fluorobenzene (Surr.)	%		89	91

	Sample ID:	Q2023001650	Q2023001674
	Sample Name		

Parameter	Units	PQL	PCB Blank - Soil	PCB Blank - Soil
ESA-P-ORG(12 - 15)				
Acenaphthene	mg/kg	0.3	<0.30	<0.30
Acenaphthylene	mg/kg	0.3	<0.30	<0.30
Anthracene	mg/kg	0.3	<0.30	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30	<0.30
Chrysene	mg/kg	0.3	<0.30	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30	<0.30
Fluoranthene	mg/kg	0.3	<0.30	<0.30
Fluorene	mg/kg	0.3	<0.30	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30	<0.30
Naphthalene	mg/kg	0.3	<0.30	<0.30
Phenanthrene	mg/kg	0.3	<0.30	<0.30
Pyrene	mg/kg	0.3	<0.30	<0.30
aldrin	mg/kg	0.1	<0.10	<0.10
a-BHC	mg/kg	0.1	<0.10	<0.10
b-BHC	mg/kg	0.1	<0.10	<0.10

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d-BHC	mg/kg	0.1	<0.10	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10	<0.10
cis-chlordane	mg/kg	0.1	<0.10	<0.10
trans-chlordane	mg/kg	0.1	<0.10	<0.10
4,4'-DDD	mg/kg	0.1	<0.10	<0.10
4,4'-DDE	mg/kg	0.1	<0.10	<0.10
4,4'-DDT	mg/kg	0.1	<0.10	<0.10
dieldrin	mg/kg	0.1	<0.10	<0.10
endosulfan I	mg/kg	0.2	<0.20	<0.20
endosulfan II	mg/kg	0.2	<0.20	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10	<0.10
endrin	mg/kg	0.2	<0.20	<0.20
endrin aldehyde	mg/kg	0.1	<0.10	<0.10
endrin ketone	mg/kg	0.1	<0.10	<0.10
heptachlor	mg/kg	0.1	<0.10	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10	<0.10
methoxychlor	mg/kg	0.1	<0.10	<0.10
chlorpyrifos	mg/kg	0.1	<0.10	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10	<0.10
diazinon	mg/kg	0.1	<0.10	<0.10
fenchlorphos	mg/kg	0.1	<0.10	<0.10
methyl parathion	mg/kg	0.1	<0.10	<0.10
prophos	mg/kg	0.1	<0.10	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10	<0.10
Aroclor 1016	mg/kg	0.5	<0.50	<0.50
Aroclor 1221	mg/kg	0.5	<0.50	<0.50
Aroclor 1232	mg/kg	0.5	<0.50	<0.50
Aroclor 1242	mg/kg	0.5	<0.50	<0.50
Aroclor 1248	mg/kg	0.5	<0.50	<0.50
Aroclor 1254	mg/kg	0.5	<0.50	<0.50
Aroclor 1260	mg/kg	0.5	<0.50	<0.50

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Sample ID:			Q2023001651	Q2023001675
Sample Name				
Parameter	**Units**	**PQL**	PCB Blank Sp - Soil	PCB Blank Sp - Soil
ESA-P-ORG(12 - 15)				
Acenaphthene	%		110	104
Anthracene	%		124	119
Fluoranthene	%		113	107
Naphthalene	%		131	120
Phenanthrene	%		114	109
Pyrene	%		116	108
p-Terphenyl-d14 (Surr.)	%		89	86
aldrin	%		139	131
endrin	%		97	95
hexachlorobenzene	%		138	121
TCMX (Surr.)	%		115	105
chlorpyrifos	%		123	125
diazinon	%		107	102
2-fluorobiphenyl (Surr.)	%		114	106
Aroclor 1016	%		96	96

Sample ID:			Q2023001652	Q2023001676
Sample Name				
Parameter	**Units**	**PQL**	TRH Blank-Soil	TRH Blank-Soil
ESA-P-ORG(3,8)				
>C10-C16	mg/kg	50	<50	<50
>C16-C34	mg/kg	100	<100	<100
>C34-C40	mg/kg	100	<100	<100
>C10-C14	mg/kg	50	<50	<50
>C15-C28	mg/kg	100	<100	<100
>C29-C36	mg/kg	100	<100	<100

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Sample ID:	Q2023001653	Q2023001677
Sample Name		

Parameter	Units	PQL	TRH Blank Spike-Soil	TRH Blank Spike-Soil
ESA-P-ORG(3,8)				
>C10-C16	%		108	101
>C10-C14	%		105	97

Sample ID:	Q2023001654
Sample Name	

Parameter	Units	PQL	PFAS Blank - Soil
ESA-P-ORG16			
PFBA	ug/kg	5	<5
PFPeA	ug/kg	5	<5
PFBS	ug/kg	5	<5
PFHxA	ug/kg	5	<5
PFPeS	ug/kg	5	<5
PFHpA	ug/kg	5	<5
PFOA	ug/kg	5	<5
PFHpS	ug/kg	5	<5
PFOS	ug/kg	5	<5
PFDA	ug/kg	5	<5
PFUdA	ug/kg	5	<5
PFDoA	ug/kg	5	<5
PFTrDA	ug/kg	5	<5
PFTeDA	ug/kg	5	<5
PFNA	ug/kg	5	<5
PFHxS	ug/kg	5	<5
MPFBA (Surr.)	%		85
M3PFBS (Surr.)	%		88
MPFOS (Surr.)	%		116
MPFHxA (Surr.)	%		76
MPFOA (Surr.)	%		84

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MPFUdA (Surr.)	%		74

Sample ID: **Q2023001655**

Sample Name

Parameter	*Units*	*PQL*	PFAS Blank Sp - Soil
ESA-P-ORG16			
PFBA	%		127
PFPeA	%		123
PFBS	%		80
PFHxA	%		106
PFPeS	%		127
PFHpA	%		77
PFOA	%		115
PFHpS	%		121
PFOS	%		111
PFDA	%		73
PFUdA	%		78
PFDoA	%		100
PFTrDA	%		117
PFTeDA	%		126
PFNA	%		122
PFHxS	%		102
MPFBA (Surr.)	%		70
M3PFBS (Surr.)	%		92
MPFOS (Surr.)	%		125
MPFHxA (Surr.)	%		83
MPFOA (Surr.)	%		97
MPFUdA (Surr.)	%		77

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	Sample ID:	S202300757101	S202300764402
	Sample Name	SP5-TP1-0.4	DSI_TP185_0-0.2
Parameter	Units	PQL		Sample Date: 23/03/2023
ESA-MP-01,ICP-01				
Arsenic	%		63	78
Cadmium	%		100	78
Chromium	%		104	69
Copper	%		84	73
Lead	%		106	75
Mercury	%		70	85
Nickel	%		106	74
Zinc	%		56	74

	Sample ID:	S202300757102	S202300764401
	Sample Name	SP5-TP1-0.4	DSI_TP185_0-0.2
Parameter	Units	PQL		Sample Date: 23/03/2023
ESA-P-ORG-07 & 08				
Benzene	%		125	132
Toluene	%		110	115
Ethylbenzene	%		103	107
m.p Xylene	%		97	100
o Xylene	%		95	99
Fluorobenzene (Surr.)	%		87	91

	Sample ID:	S202300757103	S202300764403
	Sample Name	SP5-TP1-0.4	DSI_TP185_0-0.2
Parameter	Units	PQL		Sample Date: 23/03/2023
ESA-P-ORG(12 - 15)				
Acenaphthene	%		108	110
Anthracene	%		123	122
Fluoranthene	%		112	105
Naphthalene	%		128	125
Phenanthrene	%		115	112

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Pyrene	%		113	104
p-Terphenyl-d14 (Surr.)	%		85	67
aldrin	%		138	137
endrin	%		105	120
hexachlorobenzene	%		138	129
TCMX (Surr.)	%		114	112
chlorpyrifos	%		123	132
diazinon	%		109	107
Aroclor 1016	%		101	95
2-fluorobiphenyl (Surr.)	%		112	112

		Sample ID:	**S202300757104**	**S202300764404**
		Sample Name	**SP5-TP1-0.4**	**DSI_TP185_0-0.2**
Parameter	***Units***	***PQL***		Sample Date: 23/03/2023
ESA-P-ORG(3,8)				
>C10-C16	%		106	100
>C10-C14	%		104	97

		Sample ID:	**S202300757105**
		Sample Name	**SP5-TP1-0.4**
Parameter	***Units***	***PQL***	Sample Date: 23/03/2023
ESA-P-ORG16			
PFBA	%		124
PFPeA	%		123
PFBS	%		74
PFHxA	%		107
PFPeS	%		125
PFHpA	%		70
PFOA	%		96
PFHpS	%		125
PFOS	%		109
PFDA	%		84
PFUdA	%		79
PFDoA	%		83

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PFTrDA	%		128
PFTeDA	%		120
PFNA	%		119
PFHxS	%		96
MPFBA (Surr.)	%		86
M3PFBS (Surr.)	%		127
MPFOS (Surr.)	%		103
MPFHxA (Surr.)	%		95
MPFOA (Surr.)	%		94
MPFUdA (Surr.)	%		95

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Batch Number : 2301165

Report Number : A101023.0120.00 (907-917)

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A.C.N. 093 452 950
Unit 4/10-11 Millennium Court,
Silverwater 2128
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Accreditation No.14664
Accredited for compliance with ISO/IEC 17025 - Testing.

This certificate of analysis contains General Comments and Analytical Results. Quality Control Report and Laboratory Quality Acceptance Criteria have been issued separately.

This report supersedes any previous report(s) with this reference. This document shall not be reproduced, except in full.

This report has been electronically signed by authorised signatories below.

Authorised By

Kaiyu Li

General Comments

Samples are analysed on as received basis. Sampling is not covered by NATA accreditation.

Where moisture determination has been performed, results are reported on dry weight basis.

Where the PQL of reported result differs from standard PQL, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Samples were analysed within holding time described by laboratory internal procedures if not stated otherwise. If samples delivered do not meet required analytical criteria, results will be marked with ^.

However surrogate standards are added to samples, results are not corrected for standards recoveries.

Analysis of VOC in water samples are performed on unfiltered waters (as received) spiked with surrogates and injection standards only.

SLS is responsible for all the information in the report, except that provided by the customer.

All sampling information included in the report has been provided by customer.

Information provided by the customer can affect the validity of the results.

Certificate of Analysis

Contact:	Andrew Hunt	**Date Reported:**	4/04/2023
Customer:	ADE Consulting Group	**No. of Samples:**	11
Address:	Unit 6 7 Millennium Court Silverwater NSW	**Date Received:**	28/03/2023
		Date of Analysis:	28/03/2023

Cust Ref: A101023.0120.00 0.003 L01

Comments: Sample 908 (DSI_TP155_0-0.1) has been repeated for PAH, and the results are confirmed.

Glossary:

*NATA accreditation does not cover the performance of this service
ND-not detected,
NT-not tested
INS-Insufficient material to perform the test
LCS-Laboratory Control Sample
RPD-Relative Percent Difference
N/A-Not Applicable
< less than
> greater than
PQL- Practical Quantitation Limit
^Analytical result might be compromised due to sample condition or holding time requirements
Reaction rate 1 = Slight
Reaction rate 2 = Moderate
Reaction rate 3 = High
Reaction rate 4 = Vigorous

Certificate of Analysis

	Sample ID:	2023007907	2023007908	2023007909	2023007910	2023007911	2023007912	2023007913	2023007914	2023007915	2023007916	2023007917
	Sample Name	DSI_TP153_0.1-0.2	DSI_TP155_0-0.1	DSI_TP157_0.1-0.2	DSI_TP157_0.6-0.7	DSI_TP159_0.3-0.4	DSI_TP159_0.6-0.7	DSI_TP161_0.1-0.2	DSI_TP163_0-0.1	DSI_TP165_0.3-0.4	DSI_TP165_1.0-1.1	DSI_TP165_1.6-1.7
Parameter	*Units*	*PQL*	Sample Date: 24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
ESA-P-ORG7 & ORG8												
Benzene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m.p Xylene	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o Xylene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sum of BTEX	mg/kg	2	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Total Xylenes	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Fluorobenzene (Surr.)	%		97	96	96	91	89	102	96	95	95	93	94
C6-C10	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C10 minus BTEX	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C9	mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
ESA-MP-01,ICP-01												
Arsenic	mg/kg	5	<5.0	30.0	<5.0	14.1	14.5	18.5	<5.0	<5.0	9.2	7.1	<5.0
Cadmium	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chromium	mg/kg	1	12.0	19.1	14.2	13.7	15.0	19.5	4.6	18.4	18.4	21.9	6.9
Copper	mg/kg	5	24.7	27.7	27.3	34.0	26.6	25.8	<5.0	31.1	21.2	26.7	52.7
Lead	mg/kg	5	46.5	24.0	10.9	18.7	21.9	21.3	13.7	29.5	28.7	22.9	98.4
Mercury	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel	mg/kg	1	8.7	12.2	9.6	13.1	15.5	15.9	4.0	29.6	22.0	25.3	26.2
Zinc	mg/kg	5	103.6	160.9	51.6	84.8	60.6	63.7	28.1	94.6	87.3	73.9	110.7
ESA-P-12												
% Moisture Content	%		14.2	15.3	12.6	15.9	11.5	15.2	6.4	8.6	7.4	8.2	11.6
ESA-P-ORG(12 - 15)												
Acenaphthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

Certificate of Analysis

	Sample ID:	2023007907	2023007908	2023007909	2023007910	2023007911	2023007912	2023007913	2023007914	2023007915	2023007916	2023007917
	Sample Name	DSI_TP153_0.1-0.2	DSI_TP155_0-0.1	DSI_TP157_0.1-0.2	DSI_TP157_0.6-0.7	DSI_TP159_0.3-0.4	DSI_TP159_0.6-0.7	DSI_TP161_0.1-0.2	DSI_TP163_0-0.1	DSI_TP165_0.3-0.4	DSI_TP165_1.0-1.1	DSI_TP165_1.6-1.7
Parameter	**Units**	**PQL**	Sample Date: 24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
Acenaphthylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30	0.86	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30	1.23	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30	0.76	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30	2.24	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chrysene	mg/kg	0.3	<0.30	1.15	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluoranthene	mg/kg	0.3	<0.30	0.53	<0.30	<0.30	<0.30	<0.30	0.40	<0.30	<0.30	<0.30	<0.30
Fluorene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30	1.16	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Naphthalene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Phenanthrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Pyrene	mg/kg	0.3	<0.30	1.04	<0.30	<0.30	<0.30	<0.30	0.36	<0.30	<0.30	<0.30	<0.30
Sum of Positive PAHs	mg/kg	0.3	<0.30	8.97	<0.30	<0.30	<0.30	<0.30	0.76	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.3	<0.30	1.68	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Half PQL)	mg/kg	0.3	0.35	1.83	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Benzo(a)pyrene TEQ (PQL)	mg/kg	0.3	0.70	1.98	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
p-Terphenyl-d14 (Surr.)	%		105	106	100	101	101	104	93	99	100	99	83
aldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
a-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
b-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
d-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
cis-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
trans-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

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Unit 4/10-11 Millennium Court
Silverwater 2128
Ph: (02) 9648-6669

Certificate of Analysis

	Sample ID:	2023007907	2023007908	2023007909	2023007910	2023007911	2023007912	2023007913	2023007914	2023007915	2023007916	2023007917
	Sample Name	DSI_TP153_0.1-0.2	DSI_TP155_0-0.1	DSI_TP157_0.1-0.2	DSI_TP157_0.6-0.7	DSI_TP159_0.3-0.4	DSI_TP159_0.6-0.7	DSI_TP161_0.1-0.2	DSI_TP163_0-0.1	DSI_TP165_0.3-0.4	DSI_TP165_1.0-1.1	DSI_TP165_1.6-1.7
Parameter	**Units**	**PQL**	Sample Date: 24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
4,4'-DDD	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDE	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDT	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
dieldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endosulfan I	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan II	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endrin aldehyde	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin ketone	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methoxychlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
TCMX (Surr.)	%		103	103	100	99	98	100	98	95	104	98	103
chlorpyrifos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
diazinon	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
fenchlorphos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methyl parathion	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
prophos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Aroclor 1016	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1221	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1232	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1242	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

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Certificate of Analysis

	Sample ID:	2023007907	2023007908	2023007909	2023007910	2023007911	2023007912	2023007913	2023007914	2023007915	2023007916	2023007917
	Sample Name	DSI_TP153_0.1-0.2	DSI_TP155_0-0.1	DSI_TP157_0.1-0.2	DSI_TP157_0.6-0.7	DSI_TP159_0.3-0.4	DSI_TP159_0.6-0.7	DSI_TP161_0.1-0.2	DSI_TP163_0-0.1	DSI_TP165_0.3-0.4	DSI_TP165_1.0-1.1	DSI_TP165_1.6-1.7
Parameter	***Units***	***PQL***	Sample Date: 24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
Aroclor 1248	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1254	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1260	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-fluorobiphenyl (Surr.)	%		107	107	106	104	104	105	101	98	109	105	108

Certificate of Analysis

	Sample ID:	2023007907	2023007908	2023007909	2023007910	2023007911	2023007912	2023007913	2023007914	2023007915	2023007916	2023007917
	Sample Name	DSI_TP153_0.1-0.2	DSI_TP155_0-0.1	DSI_TP157_0.1-0.2	DSI_TP157_0.6-0.7	DSI_TP159_0.3-0.4	DSI_TP159_0.6-0.7	DSI_TP161_0.1-0.2	DSI_TP163_0-0.1	DSI_TP165_0.3-0.4	DSI_TP165_1.0-1.1	DSI_TP165_1.6-1.7
Parameter	Units	PQL	Sample Date: 24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
ESA-P-ORG16													
PFBA	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFPeA	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFBS	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFHxA	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFPeS	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFHpA	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFOA	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFHpS	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFOS	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFDA	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFUdA	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFDoA	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFTrDA	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFTeDA	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFNA	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
PFHxS	ug/kg	5	<5	-	-	-	<5	-	-	-	<5	-	-
MPFBA (Surr.)	%		101	-	-	-	78	-	-	-	110	-	-
M3PFBS (Surr.)	%		102	-	-	-	85	-	-	-	77	-	-
MPFOS (Surr.)	%		124	-	-	-	122	-	-	-	125	-	-
MPFHxA (Surr.)	%		82	-	-	-	106	-	-	-	91	-	-
MPFOA (Surr.)	%		107	-	-	-	127	-	-	-	124	-	-
MPFUdA (Surr.)	%		103	-	-	-	116	-	-	-	92	-	-

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Certificate of Analysis

	Sample ID:	2023007907	2023007908	2023007909	2023007910	2023007911	2023007912	2023007913	2023007914	2023007915	2023007916	2023007917
	Sample Name	DSI_TP153_0.1-0.2	DSI_TP155_0-0.1	DSI_TP157_0.1-0.2	DSI_TP157_0.6-0.7	DSI_TP159_0.3-0.4	DSI_TP159_0.6-0.7	DSI_TP161_0.1-0.2	DSI_TP163_0-0.1	DSI_TP165_0.3-0.4	DSI_TP165_1.0-1.1	DSI_TP165_1.6-1.7
Parameter	***Units***	***PQL***	Sample Date: 24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
ESA-P-ORG(3,8)													
>C10-C16	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C16-C34	mg/kg	100	<100	145	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C34-C40	mg/kg	100	<100	<100	136	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C40 (Sum of total)	mg/kg	100	<100	145	136	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C14	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C15-C28	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C29-C36	mg/kg	100	<100	114	104	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C36 (Sum of total)	mg/kg	100	<100	114	104	<100	<100	<100	<100	<100	<100	<100	<100

Sydney Laboratory Services

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A.C.N. 093 452 950
Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Accreditation No.14664
Accredited for compliance with ISO/IEC 17025 - Testing.

This Quality Control Report contains results of QAQC samples analysis and the Laboratory Acceptance Criteria.

This report supersedes any previous report(s) with this reference. This document shall not be reproduced, except in full.

This report has been electronically signed by authorised signatories below.

Authorised By

Kaiyu Li

General Comments

Duplicate samples and matrix spike may not be prepared on smaller jobs, however are analysed at frequency. QAQC samples shown within the report as e.g. Batch Blank, Batch Matrix Spike were performed on samples not reported on that Certificate of Analysis.

Blank This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in the same manner as for samples.
Duplicate This is the interlaboratory split of a random sample from the processed batch
Matrix Spike A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class.
Surr. (Surrogate Spike) Surrogates are known additions to each sample, blank and matrix spike or LCS in a batch. Surrogates are chosen as a compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Blank shall be < PQL
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals/PFAS, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits
RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the PQL : No Limit
Results between 10-20 times the PQL : RPD must lie between 0-50%
Results >20 times the PQL : RPD must lie between 0-30%
Surrogate Recoveries : Recoveries must lie between 50-150%

SLS is responsible for all the information in the report, except that provided by the customer.

All sampling information included in the report has been provided by customer.

Information provided by the customer can affect the validity of the results.

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Ph: (02) 9648-6669

Quality Control Report

Contact:	Andrew Hunt	**Date Reported:**	4/04/2023
Customer:	ADE Consulting Group	**No. of Samples:**	25
Address:	Unit 6 7 Millennium Court Silverwater NSW	**Date Received:**	28/03/2023
		Date of Analysis:	28/03/2023

Cust Ref: A101023.0120.00 0.003 L01

Glossary:

*NATA accreditation does not cover the performance of this service
ND-not detected,
NT-not tested
INS-Insufficient material to perform the test
LCS-Laboratory Control Sample
RPD-Relative Percent Difference
N/A-Not Applicable
< less than
> greater than
PQL- Practical Quantitation Limit
^Analytical result might be compromised due to sample condition or holding time requirements
Reaction rate 1 = Slight
Reaction rate 2 = Moderate
Reaction rate 3 = High
Reaction rate 4 = Vigorous

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Quality Control Report

Sample ID: **D202300788801**

Sample Name **DSI_TP129_0.1-0.2**

Parameter	*Units*	*PQL*	
ESA-P-ORG16			
PFBA			Pass
PFPeA			Pass
PFBS			Pass
PFHxA			Pass
PFPeS			Pass
PFHpA			Pass
PFOA			Pass
PFHpS			Pass
PFOS			Pass
PFDA			Pass
PFUdA			Pass
PFDoA			Pass
PFTrDA			Pass
PFTeDA			Pass
PFNA			Pass
PFHxS			Pass
MPFBA	%		81
M3PFBS	%		83
MPFOS	%		120
MPFHxA	%		80
MPFOA	%		109
MPFUdA	%		111

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	Sample ID:	D202300790301	D202300791301
	Sample Name	DSI_TP151_0-0.2	DSI_TP161_0.1-0.2

Parameter	Units	PQL		
ESA-P-ORG7 & ORG8				
Benzene			Pass	Pass
Toluene			Pass	Pass
Ethylbenzene			Pass	Pass
m.p Xylene			Pass	Pass
o Xylene			Pass	Pass
Fluorobenzene (Surr.)	%		96	92
C6-C10			Pass	Pass
C6-C9			Pass	Pass

	Sample ID:	D202300790302	D202300791302
	Sample Name	DSI_TP151_0-0.2	DSI_TP161_0.1-0.2

Parameter	Units	PQL		
ESA-P-ORG(12 - 15)				
Acenaphthene			Pass	Pass
Acenaphthylene			Pass	Pass
Anthracene			Pass	Pass
Benzo[a]anthracene			Pass	Pass
Benzo[a]pyrene			Pass	Pass
Benzo[g,h,i]perylene			Pass	Pass
Benzo[b,k]fluoranthene			Pass	Pass
Chrysene			Pass	Pass
Dibenzo[a,h]anthracene			Pass	Pass
Fluoranthene			Pass	Pass
Fluorene			Pass	Pass
Indeno(1,2,3-cd)pyrene			Pass	Pass
Naphthalene			Pass	Pass
Phenanthrene			Pass	Pass
Pyrene			Pass	Pass
p-Terphenyl-d14 (Surr.)	%		99	97

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aldrin			Pass	Pass
a-BHC			Pass	Pass
b-BHC			Pass	Pass
d-BHC			Pass	Pass
g-BHC (lindane)			Pass	Pass
cis-chlordane			Pass	Pass
trans-chlordane			Pass	Pass
4,4'-DDD			Pass	Pass
4,4'-DDE			Pass	Pass
4,4'-DDT			Pass	Pass
dieldrin			Pass	Pass
endosulfan I			Pass	Pass
endosulfan II			Pass	Pass
endosulfan sulfate			Pass	Pass
endrin			Pass	Pass
endrin aldehyde			Pass	Pass
endrin ketone			Pass	Pass
heptachlor			Pass	Pass
heptachlor epoxide			Pass	Pass
hexachlorobenzene			Pass	Pass
methoxychlor			Pass	Pass
TCMX (Surr.)	%		104	95
chlorpyrifos			Pass	Pass
chlorpyrifos methyl			Pass	Pass
diazinon			Pass	Pass
fenchlorphos			Pass	Pass
methyl parathion			Pass	Pass
prophos			Pass	Pass
tributylphosphorotrithioite			Pass	Pass
Aroclor 1016			Pass	Pass
Aroclor 1221			Pass	Pass
Aroclor 1232			Pass	Pass

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Aroclor 1242			Pass	Pass
Aroclor 1248			Pass	Pass
Aroclor 1254			Pass	Pass
Aroclor 1260			Pass	Pass
2-fluorobiphenyl (Surr.)	%		105	96
		Sample ID:	**D202300790303**	**D202300791303**
		Sample Name	**DSI_TP151_0-0.2**	**DSI_TP161_0.1-0.2**
Parameter	***Units***	***PQL***		
ESA-P-ORG(3,8)				
>C10-C16			Pass	Pass
>C16-C34			Pass	Pass
>C34-C40			Pass	Pass
>C10-C14			Pass	Pass
>C15-C28			Pass	Pass
>C29-C36			Pass	Pass
		Sample ID:	**D202300790304**	**D202300791304**
		Sample Name	**DSI_TP151_0-0.2**	**DSI_TP161_0.1-0.2**
Parameter	***Units***	***PQL***	24/03/2023	24/03/2023
ESA-MP-01,ICP-01				
Arsenic			Pass	Pass
Cadmium			Pass	Pass
Chromium			Pass	Pass
Copper			Pass	Pass
Lead			Pass	Pass
Mercury			Pass	Pass
Nickel			Pass	Pass
Zinc			Pass	Pass

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Sample ID:	Q2023001776
Sample Name	

Parameter	*Units*	*PQL*	PFAS Blank - Soil
ESA-P-ORG16			
PFBA	ug/kg	5	<5
PFPeA	ug/kg	5	<5
PFBS	ug/kg	5	<5
PFHxA	ug/kg	5	<5
PFPeS	ug/kg	5	<5
PFHpA	ug/kg	5	<5
PFOA	ug/kg	5	<5
PFHpS	ug/kg	5	<5
PFOS	ug/kg	5	<5
PFDA	ug/kg	5	<5
PFUdA	ug/kg	5	<5
PFDoA	ug/kg	5	<5
PFTrDA	ug/kg	5	<5
PFTeDA	ug/kg	5	<5
PFNA	ug/kg	5	<5
PFHxS	ug/kg	5	<5
MPFBA (Surr.)	%		78
M3PFBS (Surr.)	%		72
MPFOS (Surr.)	%		106
MPFHxA (Surr.)	%		103
MPFOA (Surr.)	%		88
MPFUdA (Surr.)	%		95

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Sample ID:	**Q2023001777**
	Sample Name

Parameter	*Units*	*PQL*	PFAS Blank Sp - Soil
ESA-P-ORG16			
PFBA	%		116
PFPeA	%		127
PFBS	%		104
PFHxA	%		117
PFPeS	%		120
PFHpA	%		89
PFOA	%		119
PFHpS	%		129
PFOS	%		96
PFDA	%		76
PFUdA	%		77
PFDoA	%		71
PFTrDA	%		100
PFTeDA	%		129
PFNA	%		129
PFHxS	%		113
MPFBA (Surr.)	%		73
M3PFBS (Surr.)	%		85
MPFOS (Surr.)	%		120
MPFHxA (Surr.)	%		104
MPFOA (Surr.)	%		124
MPFUdA (Surr.)	%		78

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Sample ID:	**Q2023001778**
Sample Name	

Parameter	*Units*	*PQL*	BTEX Blank - Soil
ESA-P-ORG7 & ORG8			
Benzene	mg/kg	0.5	<0.50
Toluene	mg/kg	0.5	<0.50
Ethylbenzene	mg/kg	1	<1.0
m.p Xylene	mg/kg	2	<2.0
o Xylene	mg/kg	1	<1.0
C6-C10	mg/kg	35	<35
C6-C9	mg/kg	25	<25

Sample ID:	**Q2023001779**
Sample Name	

Parameter	*Units*	*PQL*	BTEX Blank Sp-Soil
ESA-P-ORG7 & ORG8			
Benzene	%		130
Toluene	%		112
Ethylbenzene	%		103
m.p Xylene	%		96
o Xylene	%		95
Fluorobenzene (Surr.)	%		90

Sample ID:	**Q2023001780**
Sample Name	

Parameter	*Units*	*PQL*	PCB Blank - Soil
ESA-P-ORG(12 - 15)			
Acenaphthene	mg/kg	0.3	<0.30
Acenaphthylene	mg/kg	0.3	<0.30
Anthracene	mg/kg	0.3	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30

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Chrysene	mg/kg	0.3	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30
Fluoranthene	mg/kg	0.3	<0.30
Fluorene	mg/kg	0.3	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30
Naphthalene	mg/kg	0.3	<0.30
Phenanthrene	mg/kg	0.3	<0.30
Pyrene	mg/kg	0.3	<0.30
aldrin	mg/kg	0.1	<0.10
a-BHC	mg/kg	0.1	<0.10
b-BHC	mg/kg	0.1	<0.10
d-BHC	mg/kg	0.1	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10
cis-chlordane	mg/kg	0.1	<0.10
trans-chlordane	mg/kg	0.1	<0.10
4,4'-DDD	mg/kg	0.1	<0.10
4,4'-DDE	mg/kg	0.1	<0.10
4,4'-DDT	mg/kg	0.1	<0.10
dieldrin	mg/kg	0.1	<0.10
endosulfan I	mg/kg	0.2	<0.20
endosulfan II	mg/kg	0.2	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10
endrin	mg/kg	0.2	<0.20
endrin aldehyde	mg/kg	0.1	<0.10
endrin ketone	mg/kg	0.1	<0.10
heptachlor	mg/kg	0.1	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10
methoxychlor	mg/kg	0.1	<0.10
chlorpyrifos	mg/kg	0.1	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10
diazinon	mg/kg	0.1	<0.10

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fenchlorphos	mg/kg	0.1	<0.10
methyl parathion	mg/kg	0.1	<0.10
prophos	mg/kg	0.1	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10
Aroclor 1016	mg/kg	0.5	<0.50
Aroclor 1221	mg/kg	0.5	<0.50
Aroclor 1232	mg/kg	0.5	<0.50
Aroclor 1242	mg/kg	0.5	<0.50
Aroclor 1248	mg/kg	0.5	<0.50
Aroclor 1254	mg/kg	0.5	<0.50
Aroclor 1260	mg/kg	0.5	<0.50

Sample ID:	**Q2023001781**
Sample Name	

Parameter	***Units***	***PQL***	PCB Blank Sp - Soil
ESA-P-ORG(12 - 15)			
Acenaphthene	%		107
Anthracene	%		120
Fluoranthene	%		110
Naphthalene	%		121
Phenanthrene	%		117
Pyrene	%		113
p-Terphenyl-d14 (Surr.)	%		90
aldrin	%		136
endrin	%		133
hexachlorobenzene	%		126
TCMX (Surr.)	%		99
chlorpyrifos	%		128
diazinon	%		106
2-fluorobiphenyl (Surr.)	%		101
Aroclor 1016	%		99

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Sample ID:	Q2023001782
Sample Name	

Parameter	Units	PQL	TRH Blank-Soil
ESA-P-ORG(3,8)			
>C10-C16	mg/kg	50	<50
>C16-C34	mg/kg	100	<100
>C34-C40	mg/kg	100	<100
>C10-C14	mg/kg	50	<50
>C15-C28	mg/kg	100	<100
>C29-C36	mg/kg	100	<100

Sample ID:	Q2023001783
Sample Name	

Parameter	Units	PQL	TRH Blank Spike-Soil
ESA-P-ORG(3,8)			
>C10-C16	%		100
>C10-C14	%		95

Sample ID:	Q2023001792
Sample Name	

Parameter	Units	PQL	Metals Blank - Soil
ESA-MP-01,ICP-01			
Arsenic	mg/kg	5	<5.0
Cadmium	mg/kg	0.3	<0.30
Chromium	mg/kg	1	<1.0
Copper	mg/kg	5	<5.0
Lead	mg/kg	5	<5.0
Mercury	mg/kg	0.1	<0.10
Nickel	mg/kg	1	<1.0
Zinc	mg/kg	5	<5.0

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Sample ID:	**Q2023001793**
Sample Name	

Parameter	*Units*	*PQL*	Metals Blank Sp-Soil
ESA-MP-01,ICP-01			
Arsenic	%		94
Cadmium	%		100
Chromium	%		98
Copper	%		96
Lead	%		101
Mercury	%		76
Nickel	%		100
Zinc	%		97

Sample ID:	**S202300785903**
Sample Name	

Parameter	*Units*	*PQL*	
ESA-MP-01,ICP-01			
Arsenic	%		113

Sample ID:	**S202300788204**
Sample Name	**DSI_TP123_0.3-0.4**

Parameter	*Units*	*PQL*	
ESA-P-ORG16			
PFBA	%		116
PFPeA	%		130
PFBS	%		105
PFHxA	%		111
PFPeS	%		121
PFHpA	%		81
PFOA	%		112
PFHpS	%		125
PFOS	%		104
PFDA	%		86

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PFUdA	%		71
PFDoA	%		91
PFTrDA	%		119
PFTeDA	%		110
PFNA	%		105
PFHxS	%		105
MPFBA (Surr.)	%		84
M3PFBS (Surr.)	%		80
MPFOS (Surr.)	%		117
MPFHxA (Surr.)	%		80
MPFOA (Surr.)	%		104
MPFUdA (Surr.)	%		129

Sample ID: **S202300790201**

Sample Name **DSI_TP149_0.4-0.5**

Parameter	*Units*	*PQL*	
ESA-P-ORG-07 & 08			
Benzene	%		136
Toluene	%		118
Ethylbenzene	%		108
m.p Xylene	%		101
o Xylene	%		100
Fluorobenzene (Surr.)	%		94

Sample ID: **S202300790202**

Sample Name **DSI_TP149_0.4-0.5**

Parameter	*Units*	*PQL*	
ESA-P-ORG(12 - 15)			
Acenaphthene	%		103
Anthracene	%		118
Fluoranthene	%		110
Naphthalene	%		117
Phenanthrene	%		113

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Pyrene	%		113
p-Terphenyl-d14 (Surr.)	%		94
aldrin	%		132
endrin	%		132
hexachlorobenzene	%		121
TCMX (Surr.)	%		98
chlorpyrifos	%		135
diazinon	%		105
Aroclor 1016	%		100
2-fluorobiphenyl (Surr.)	%		98

Sample ID: **S202300790203**

Sample Name **DSI_TP149_0.4-0.5**

Parameter	*Units*	*PQL*	
ESA-P-ORG(3,8)			
>C10-C16	%		96
>C10-C14	%		93

Sample ID: **S202300790204**

Sample Name **DSI_TP149_0.4-0.5**

Parameter	*Units*	*PQL*	24/03/2023
ESA-MP-01,ICP-01			
Cadmium	%		100
Chromium	%		119
Copper	%		122
Lead	%		97
Mercury	%		75
Nickel	%		111
Zinc	%		111

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Accreditation No.14664
Accredited for compliance with ISO/IEC 17025 - Testing.

This certificate of analysis contains General Comments and Analytical Results. Quality Control Report and Laboratory Quality Acceptance Criteria have been issued separately.

This report supersedes any previous report(s) with this reference. This document shall not be reproduced, except in full.

This report has been electronically signed by authorised signatories below.

Authorised By

Kaiyu Li

General Comments

Samples are analysed on as received basis. Sampling is not covered by NATA accreditation.

Where moisture determination has been performed, results are reported on dry weight basis.

Where the PQL of reported result differs from standard PQL, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Samples were analysed within holding time described by laboratory internal procedures if not stated otherwise. If samples delivered do not meet required analytical criteria, results will be marked with ^.

However surrogate standards are added to samples, results are not corrected for standards recoveries.

Analysis of VOC in water samples are performed on unfiltered waters (as received) spiked with surrogates and injection standards only.

SLS is responsible for all the information in the report, except that provided by the customer.

All sampling information included in the report has been provided by customer.

Information provided by the customer can affect the validity of the results.

Certificate of Analysis

Contact: Andrew Hunt
Customer: ADE Consulting Group
Address: Unit 6
7 Millennium Court
Silverwater NSW

Date Reported: 4/04/2023
No. of Samples: 24
Date Received: 28/03/2023
Date of Analysis: 28/03/2023

Cust Ref: A101023.0120.00 0.003 L01

Comments: Samples 890 (DSI_TP133_0.1-0.2) and 902 (DSI_TP149_0.4-0.5) have been repeated for metals, and the results are confirmed.

Glossary:
*NATA accreditation does not cover the performance of this service
ND-not detected,
NT-not tested
INS-Insufficient material to perform the test
LCS-Laboratory Control Sample
RPD-Relative Percent Difference
N/A-Not Applicable
< less than
> greater than
PQL- Practical Quantitation Limit
^Analytical result might be compromised due to sample condition or holding time requirements
Reaction rate 1 = Slight
Reaction rate 2 = Moderate
Reaction rate 3 = High
Reaction rate 4 = Vigorous

Certificate of Analysis

	Sample ID:	2023007882	2023007883	2023007884	2023007885	2023007886	2023007887	2023007888	2023007889	2023007890	2023007891	2023007892
	Sample Name	DSI_TP123_0.3-0.4	DSI_TP125_0-0.2	DSI_TP125_1.4-1.5	DSI_TP125_1.8-1.9	DSI_TP127_0.2-0.3	DSI_TP127_0.5-0.6	DSI_TP129_0.1-0.2	DSI_TP131_0.1-0.2	DSI_TP133_0.1-0.2	DSI_TP133_0.9-1.0	DSI_TP135_0.1-0.2
Parameter	*Units*	*PQL*	Sample Date: 24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
ESA-P-ORG7 & ORG8													
Benzene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m.p Xylene	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o Xylene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sum of BTEX	mg/kg	2	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Total Xylenes	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Fluorobenzene (Surr.)	%		94	89	93	93	95	95	95	98	93	97	90
C6-C10	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C10 minus BTEX	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C9	mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
ESA-MP-01,ICP-01													
Arsenic	mg/kg	5	9.7	9.6	36.2	26.2	9.7	17.6	11.0	6.7	10.0	11.5	7.5
Cadmium	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chromium	mg/kg	1	17.7	24.3	35.6	26.1	37.6	60.4	22.3	17.8	26.5	27.1	42.3
Copper	mg/kg	5	22.5	35.9	30.6	18.1	28.5	41.6	30.7	24.2	30.1	36.0	25.6
Lead	mg/kg	5	13.9	24.3	22.3	9.3	14.5	17.6	26.0	13.2	190.1	17.3	13.5
Mercury	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel	mg/kg	1	17.1	32.5	17.6	9.0	37.4	54.6	28.4	16.8	14.8	35.0	37.2
Zinc	mg/kg	5	42.3	96.6	40.6	33.0	86.3	124.2	72.1	42.1	142.2	80.5	68.2
ESA-P-12													
% Moisture Content	%		12.3	44.0	19.9	15.8	21.3	21.2	16.2	15.4	15.0	10.3	28.2
ESA-P-ORG(12 - 15)													
Acenaphthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

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	Sample ID:	2023007882	2023007883	2023007884	2023007885	2023007886	2023007887	2023007888	2023007889	2023007890	2023007891	2023007892
	Sample Name	DSI_TP123_0.3-0.4	DSI_TP125_0-0.2	DSI_TP125_1.4-1.5	DSI_TP125_1.8-1.9	DSI_TP127_0.2-0.3	DSI_TP127_0.5-0.6	DSI_TP129_0.1-0.2	DSI_TP131_0.1-0.2	DSI_TP133_0.1-0.2	DSI_TP133_0.9-1.0	DSI_TP135_0.1-0.2
Parameter	**Units**	**PQL**	Sample Date: 24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
Acenaphthylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.57	<0.30	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.45	<0.30	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.32	<0.30	<0.30
Chrysene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.37	<0.30	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.85	<0.30	<0.30
Fluorene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.33	<0.30	<0.30
Naphthalene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Phenanthrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.98	<0.30	<0.30
Sum of Positive PAHs	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	3.87	<0.30	<0.30
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.58	<0.30	<0.30
Benzo(a)pyrene TEQ (Half PQL)	mg/kg	0.3	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.73	0.35	0.35
Benzo(a)pyrene TEQ (PQL)	mg/kg	0.3	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.88	0.70	0.70
p-Terphenyl-d14 (Surr.)	%		96	92	94	92	91	86	91	127	76	90	83
aldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
a-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
b-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
d-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
cis-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
trans-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

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Certificate of Analysis

	Sample ID:	2023007882	2023007883	2023007884	2023007885	2023007886	2023007887	2023007888	2023007889	2023007890	2023007891	2023007892
	Sample Name	DSI_TP123_0.3-0.4	DSI_TP125_0-0.2	DSI_TP125_1.4-1.5	DSI_TP125_1.8-1.9	DSI_TP127_0.2-0.3	DSI_TP127_0.5-0.6	DSI_TP129_0.1-0.2	DSI_TP131_0.1-0.2	DSI_TP133_0.1-0.2	DSI_TP133_0.9-1.0	DSI_TP135_0.1-0.2
Parameter	**Units**	**PQL**	Sample Date: 24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
4,4'-DDD	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDE	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDT	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
dieldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endosulfan I	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan II	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endrin aldehyde	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin ketone	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methoxychlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
TCMX (Surr.)	%		106	115	104	104	100	113	102	121	126	108	108
chlorpyrifos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
diazinon	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
fenchlorphos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methyl parathion	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
prophos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Aroclor 1016	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1221	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1232	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1242	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

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Certificate of Analysis

	Sample ID:	2023007882	2023007883	2023007884	2023007885	2023007886	2023007887	2023007888	2023007889	2023007890	2023007891	2023007892
	Sample Name	DSI_TP123_0.3-0.4	DSI_TP125_0-0.2	DSI_TP125_1.4-1.5	DSI_TP125_1.8-1.9	DSI_TP127_0.2-0.3	DSI_TP127_0.5-0.6	DSI_TP129_0.1-0.2	DSI_TP131_0.1-0.2	DSI_TP133_0.1-0.2	DSI_TP133_0.9-1.0	DSI_TP135_0.1-0.2
Parameter	***Units***	***PQL***	Sample Date: 24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
Aroclor 1248	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1254	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1260	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-fluorobiphenyl (Surr.)	%		107	118	104	104	102	110	101	140	118	109	110

Certificate of Analysis

	Sample ID:	2023007882	2023007883	2023007884	2023007885	2023007886	2023007887	2023007888	2023007889	2023007890	2023007891	2023007892
	Sample Name	DSI_TP123_0.3-0.4	DSI_TP125_0-0.2	DSI_TP125_1.4-1.5	DSI_TP125_1.8-1.9	DSI_TP127_0.2-0.3	DSI_TP127_0.5-0.6	DSI_TP129_0.1-0.2	DSI_TP131_0.1-0.2	DSI_TP133_0.1-0.2	DSI_TP133_0.9-1.0	DSI_TP135_0.1-0.2
Parameter	*Units*	*PQL*	Sample Date: 24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
ESA-P-ORG16												
PFBA	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFPeA	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFBS	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFHxA	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFPeS	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFHpA	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFOA	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFHpS	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFOS	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFDA	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFUdA	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFDoA	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFTrDA	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFTeDA	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFNA	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
PFHxS	ug/kg	5	<5	-	-	-	-	-	<5	-	-	-	<5
MPFBA (Surr.)	%		72	-	-	-	-	-	100	-	-	-	78
M3PFBS (Surr.)	%		81	-	-	-	-	-	72	-	-	-	82
MPFOS (Surr.)	%		125	-	-	-	-	-	120	-	-	-	106
MPFHxA (Surr.)	%		107	-	-	-	-	-	77	-	-	-	77
MPFOA (Surr.)	%		107	-	-	-	-	-	110	-	-	-	104
MPFUdA (Surr.)	%		101	-	-	-	-	-	102	-	-	-	107

Certificate of Analysis

	Sample ID:	2023007882	2023007883	2023007884	2023007885	2023007886	2023007887	2023007888	2023007889	2023007890	2023007891	2023007892
	Sample Name	DSI_TP123_0.3-0.4	DSI_TP125_0-0.2	DSI_TP125_1.4-1.5	DSI_TP125_1.8-1.9	DSI_TP127_0.2-0.3	DSI_TP127_0.5-0.6	DSI_TP129_0.1-0.2	DSI_TP131_0.1-0.2	DSI_TP133_0.1-0.2	DSI_TP133_0.9-1.0	DSI_TP135_0.1-0.2
Parameter	**Units**	**PQL**	Sample Date: 24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
ESA-P-ORG(3,8)													
>C10-C16	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C16-C34	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C34-C40	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C40 (Sum of total)	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C14	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C15-C28	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C29-C36	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C36 (Sum of total)	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100

Certificate of Analysis

	Sample ID:	2023007893	2023007894	2023007895	2023007896	2023007897	2023007898	2023007899	2023007900	2023007901	2023007902	2023007903
	Sample Name	DSI_TP135_0.5-0.6	DSI_TP137_0-0.1	DSI_TP139_0.2-0.3	DSI_TP141_0.2-0.3	DSI_TP143_0.3-0.4	DSI_TP143_0.8-0.9	DSI_TP145_0-0.1	DSI_TP147_0-0.1	DSI_TP149_0.1-0.2	DSI_TP149_0.4-0.5	DSI_TP151_0-0.2
Parameter	**Units**	**PQL**	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
ESA-P-ORG7 & ORG8												
Benzene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m.p Xylene	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o Xylene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sum of BTEX	mg/kg	2	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Total Xylenes	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Fluorobenzene (Surr.)	%		93	93	94	95	94	94	95	95	98	96	98
C6-C10	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C10 minus BTEX	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C9	mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
ESA-MP-01,ICP-01												
Arsenic	mg/kg	5	<5.0	<5.0	8.1	<5.0	12.2	18.5	<5.0	12.0	6.5	66.3	18.1
Cadmium	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chromium	mg/kg	1	15.5	13.8	12.3	5.1	46.2	18.9	17.2	22.9	19.8	6.7	15.3
Copper	mg/kg	5	32.3	18.1	24.9	15.7	38.1	37.7	34.8	28.1	67.7	46.0	30.4
Lead	mg/kg	5	31.6	19.7	10.2	9.1	26.9	14.3	36.1	15.8	39.6	14.0	23.5
Mercury	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	0.31	<0.10	<0.10	<0.10	<0.10	0.12
Nickel	mg/kg	1	17.1	7.6	5.6	1.9	74.0	17.1	19.0	26.1	49.9	6.5	12.3
Zinc	mg/kg	5	73.1	59.3	25.4	8.6	94.6	84.4	78.4	63.6	128.4	76.1	59.1
ESA-P-12													
% Moisture Content	%		17.6	17.1	12.5	19.6	9.5	11.3	17.9	15.3	27.2	18.0	13.3
ESA-P-ORG(12 - 15)													
Acenaphthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Acenaphthylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

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	Sample ID:	2023007893	2023007894	2023007895	2023007896	2023007897	2023007898	2023007899	2023007900	2023007901	2023007902	2023007903
	Sample Name	DSI_TP135_0.5-0.6	DSI_TP137_0-0.1	DSI_TP139_0.2-0.3	DSI_TP141_0.2-0.3	DSI_TP143_0.3-0.4	DSI_TP143_0.8-0.9	DSI_TP145_0-0.1	DSI_TP147_0-0.1	DSI_TP149_0.1-0.2	DSI_TP149_0.4-0.5	DSI_TP151_0-0.2
Parameter	**Units**	**PQL**	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
Anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chrysene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluorene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Naphthalene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Phenanthrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Sum of Positive PAHs	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Half PQL)	mg/kg	0.3	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Benzo(a)pyrene TEQ (PQL)	mg/kg	0.3	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
p-Terphenyl-d14 (Surr.)	%		97	84	99	100	81	89	77	93	93	95	97
aldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
a-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
b-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
d-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
cis-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
trans-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDD	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

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Certificate of Analysis

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	Sample Name	DSI_TP135_0.5-0.6	DSI_TP137_0-0.1	DSI_TP139_0.2-0.3	DSI_TP141_0.2-0.3	DSI_TP143_0.3-0.4	DSI_TP143_0.8-0.9	DSI_TP145_0-0.1	DSI_TP147_0-0.1	DSI_TP149_0.1-0.2	DSI_TP149_0.4-0.5	DSI_TP151_0-0.2
Parameter	**Units**	**PQL**	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
4,4'-DDE	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDT	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
dieldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endosulfan I	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan II	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endrin aldehyde	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin ketone	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methoxychlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
TCMX (Surr.)	%		103	118	106	116	100	98	102	98	104	99	103
chlorpyrifos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
diazinon	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
fenchlorphos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methyl parathion	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
prophos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Aroclor 1016	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1221	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1232	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1242	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1248	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

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	Sample Name	DSI_TP135_0.5-0.6	DSI_TP137_0-0.1	DSI_TP139_0.2-0.3	DSI_TP141_0.2-0.3	DSI_TP143_0.3-0.4	DSI_TP143_0.8-0.9	DSI_TP145_0-0.1	DSI_TP147_0-0.1	DSI_TP149_0.1-0.2	DSI_TP149_0.4-0.5	DSI_TP151_0-0.2
Parameter	**Units**	**PQL**	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
Aroclor 1254	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1260	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-fluorobiphenyl (Surr.)	%		105	109	108	116	105	94	104	99	106	100	106
ESA-P-ORG16													
PFBA	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFPeA	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFBS	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFHxA	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFPeS	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFHpA	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFOA	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFHpS	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFOS	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFDA	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFUdA	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFDoA	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFTrDA	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFTeDA	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFNA	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
PFHxS	ug/kg	5	-	-	-	<5	-	-	-	<5	-	-	-
MPFBA (Surr.)	%		-	-	-	80	-	-	-	104	-	-	-
M3PFBS (Surr.)	%		-	-	-	94	-	-	-	77	-	-	-
MPFOS (Surr.)	%		-	-	-	121	-	-	-	123	-	-	-
MPFHxA (Surr.)	%		-	-	-	78	-	-	-	90	-	-	-
MPFOA (Surr.)	%		-	-	-	107	-	-	-	121	-	-	-
MPFUdA (Surr.)	%		-	-	-	93	-	-	-	105	-	-	-

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	Sample Name	DSI_TP135_0.5-0.6	DSI_TP137_0-0.1	DSI_TP139_0.2-0.3	DSI_TP141_0.2-0.3	DSI_TP143_0.3-0.4	DSI_TP143_0.8-0.9	DSI_TP145_0-0.1	DSI_TP147_0-0.1	DSI_TP149_0.1-0.2	DSI_TP149_0.4-0.5	DSI_TP151_0-0.2
Parameter	*Units*	*PQL*	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023	24/03/2023
ESA-P-ORG(3,8)													
>C10-C16	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C16-C34	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C34-C40	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C40 (Sum of total)	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C14	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C15-C28	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C29-C36	mg/kg	100	<100	<100	<100	<100	<100	<100	100	<100	<100	<100	<100
>C10-C36 (Sum of total)	mg/kg	100	<100	<100	<100	<100	<100	<100	100	<100	<100	<100	<100

Certificate of Analysis

	Sample ID:	2023007904	2023007906
	Sample Name	DSI_TP151_0.3-0.4	DSI_BR2
Parameter	Units	PQL	24/03/2023	24/03/2023
ESA-P-ORG7 & ORG8				
Benzene	mg/kg	0.5	<0.50	<0.50
Toluene	mg/kg	0.5	<0.50	<0.50
Ethylbenzene	mg/kg	1	<1.0	<1.0
m.p Xylene	mg/kg	2	<2.0	<2.0
o Xylene	mg/kg	1	<1.0	<1.0
Sum of BTEX	mg/kg	2	<2.00	<2.00
Total Xylenes	mg/kg	2	<2.0	<2.0
Fluorobenzene (Surr.)	%		99	95
C6-C10	mg/kg	35	<35	<35
C6-C10 minus BTEX	mg/kg	35	<35	<35
C6-C9	mg/kg	25	<25	<25
ESA-MP-01,ICP-01				
Arsenic	mg/kg	5	22.7	9.2
Cadmium	mg/kg	0.3	<0.30	<0.30
Chromium	mg/kg	1	27.8	15.2
Copper	mg/kg	5	21.8	17.3
Lead	mg/kg	5	35.3	23.3
Mercury	mg/kg	0.1	<0.10	<0.10
Nickel	mg/kg	1	6.5	16.7
Zinc	mg/kg	5	34.6	48.9
ESA-P-12				
% Moisture Content	%		15.7	7.7
ESA-P-ORG(12 - 15)				
Acenaphthene	mg/kg	0.3	<0.30	<0.30
Acenaphthylene	mg/kg	0.3	<0.30	<0.30

Certificate of Analysis

	Sample ID:	2023007904	2023007906
	Sample Name	DSI_TP151_0.3-0.4	DSI_BR2
Parameter	Units	PQL	24/03/2023	24/03/2023
Anthracene	mg/kg	0.3	<0.30	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30	<0.30
Chrysene	mg/kg	0.3	<0.30	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30	<0.30
Fluoranthene	mg/kg	0.3	<0.30	<0.30
Fluorene	mg/kg	0.3	<0.30	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30	<0.30
Naphthalene	mg/kg	0.3	<0.30	<0.30
Phenanthrene	mg/kg	0.3	<0.30	<0.30
Pyrene	mg/kg	0.3	<0.30	<0.30
Sum of Positive PAHs	mg/kg	0.3	<0.30	<0.30
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.3	<0.30	<0.30
Benzo(a)pyrene TEQ (Half PQL)	mg/kg	0.3	0.35	0.35
Benzo(a)pyrene TEQ (PQL)	mg/kg	0.3	0.70	0.70
p-Terphenyl-d14 (Surr.)	%		98	104
aldrin	mg/kg	0.1	<0.10	<0.10
a-BHC	mg/kg	0.1	<0.10	<0.10
b-BHC	mg/kg	0.1	<0.10	<0.10
d-BHC	mg/kg	0.1	<0.10	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10	<0.10
cis-chlordane	mg/kg	0.1	<0.10	<0.10
trans-chlordane	mg/kg	0.1	<0.10	<0.10
4,4'-DDD	mg/kg	0.1	<0.10	<0.10

Certificate of Analysis

	Sample ID:	2023007904	2023007906
	Sample Name	DSI_TP151_0.3-0.4	DSI_BR2
Parameter	Units	PQL	24/03/2023	24/03/2023
4,4'-DDE	mg/kg	0.1	<0.10	<0.10
4,4'-DDT	mg/kg	0.1	<0.10	<0.10
dieldrin	mg/kg	0.1	<0.10	<0.10
endosulfan I	mg/kg	0.2	<0.20	<0.20
endosulfan II	mg/kg	0.2	<0.20	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10	<0.10
endrin	mg/kg	0.2	<0.20	<0.20
endrin aldehyde	mg/kg	0.1	<0.10	<0.10
endrin ketone	mg/kg	0.1	<0.10	<0.10
heptachlor	mg/kg	0.1	<0.10	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10	<0.10
methoxychlor	mg/kg	0.1	<0.10	<0.10
TCMX (Surr.)	%		100	94
chlorpyrifos	mg/kg	0.1	<0.10	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10	<0.10
diazinon	mg/kg	0.1	<0.10	<0.10
fenchlorphos	mg/kg	0.1	<0.10	<0.10
methyl parathion	mg/kg	0.1	<0.10	<0.10
prophos	mg/kg	0.1	<0.10	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10	<0.10
Aroclor 1016	mg/kg	0.5	<0.50	<0.50
Aroclor 1221	mg/kg	0.5	<0.50	<0.50
Aroclor 1232	mg/kg	0.5	<0.50	<0.50
Aroclor 1242	mg/kg	0.5	<0.50	<0.50
Aroclor 1248	mg/kg	0.5	<0.50	<0.50

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Certificate of Analysis

	Sample ID:	2023007904	2023007906
	Sample Name	DSI_TP151_0.3-0.4	DSI_BR2
Parameter	**Units**	**PQL**	24/03/2023	24/03/2023
Aroclor 1254	mg/kg	0.5	<0.50	<0.50
Aroclor 1260	mg/kg	0.5	<0.50	<0.50
2-fluorobiphenyl (Surr.)	%		105	97
ESA-P-ORG(3,8)				
>C10-C16	mg/kg	50	<50	<50
>C16-C34	mg/kg	100	<100	<100
>C34-C40	mg/kg	100	<100	<100
>C10-C40 (Sum of total)	mg/kg	100	<100	<100
>C10-C14	mg/kg	50	<50	<50
>C15-C28	mg/kg	100	<100	<100
>C29-C36	mg/kg	100	<100	<100
>C10-C36 (Sum of total)	mg/kg	100	<100	<100

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Accreditation No.14664
Accredited for compliance with ISO/IEC 17025 - Testing.

This Quality Control Report contains results of QAQC samples analysis and the Laboratory Acceptance Criteria.

This report supersedes any previous report(s) with this reference. This document shall not be reproduced, except in full.

This report has been electronically signed by authorised signatories below.

Authorised By

Kaiyu Li

General Comments

Duplicate samples and matrix spike may not be prepared on smaller jobs, however are analysed at frequency. QAQC samples shown within the report as e.g. Batch Blank, Batch Matrix Spike were performed on samples not reported on that Certificate of Analysis.

Blank This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in the same manner as for samples.
Duplicate This is the interlaboratory split of a random sample from the processed batch
Matrix Spike A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class.
Surr. (Surrogate Spike) Surrogates are known additions to each sample, blank and matrix spike or LCS in a batch. Surrogates are chosen as a compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Blank shall be < PQL
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals/PFAS, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits
RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the PQL : No Limit
Results between 10-20 times the PQL : RPD must lie between 0-50%
Results >20 times the PQL : RPD must lie between 0-30%
Surrogate Recoveries : Recoveries must lie between 50-150%

SLS is responsible for all the information in the report, except that provided by the customer.

All sampling information included in the report has been provided by customer.

Information provided by the customer can affect the validity of the results.

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Quality Control Report

Contact:	Andrew Hunt	**Date Reported:**	4/04/2023
Customer:	ADE Consulting Group	**No. of Samples:**	45
Address:	Unit 6 7 Millennium Court Silverwater NSW	**Date Received:**	28/03/2023
		Date of Analysis:	28/03/2023

Cust Ref: A101023.0120.00 0.003 L01

Glossary:

*NATA accreditation does not cover the performance of this service
ND-not detected,
NT-not tested
INS-Insufficient material to perform the test
LCS-Laboratory Control Sample
RPD-Relative Percent Difference
N/A-Not Applicable
< less than
> greater than
PQL- Practical Quantitation Limit
^Analytical result might be compromised due to sample condition or holding time requirements
Reaction rate 1 = Slight
Reaction rate 2 = Moderate
Reaction rate 3 = High
Reaction rate 4 = Vigorous

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Quality Control Report

	Sample ID:	D202300788301	D202300789201	D202300790301	D202300791301
	Sample Name	DSI_TP125_0-0.2	DSI_TP135_0.1-0.2	DSI_TP151_0-0.2	DSI_TP161_0.1-0.2
Parameter	Units	PQL				
ESA-P-ORG7 & ORG8						
Benzene			Pass	Pass	Pass	Pass
Toluene			Pass	Pass	Pass	Pass
Ethylbenzene			Pass	Pass	Pass	Pass
m.p Xylene			Pass	Pass	Pass	Pass
o Xylene			Pass	Pass	Pass	Pass
Fluorobenzene (Surr.)	%		91	92	96	92
C6-C10			Pass	Pass	Pass	Pass
C6-C9			Pass	Pass	Pass	Pass

	Sample ID:	D202300788302	D202300789202	D202300790302	D202300791302
	Sample Name	DSI_TP125_0-0.2	DSI_TP135_0.1-0.2	DSI_TP151_0-0.2	DSI_TP161_0.1-0.2
Parameter	Units	PQL				
ESA-P-ORG(12 - 15)						
Acenaphthene			Pass	Pass	Pass	Pass
Acenaphthylene			Pass	Pass	Pass	Pass
Anthracene			Pass	Pass	Pass	Pass
Benzo[a]anthracene			Pass	Pass	Pass	Pass
Benzo[a]pyrene			Pass	Pass	Pass	Pass
Benzo[g,h,i]perylene			Pass	Pass	Pass	Pass
Benzo[b,k]fluoranthene			Pass	Pass	Pass	Pass
Chrysene			Pass	Pass	Pass	Pass
Dibenzo[a,h]anthracene			Pass	Pass	Pass	Pass
Fluoranthene			Pass	Pass	Pass	Pass
Fluorene			Pass	Pass	Pass	Pass
Indeno(1,2,3-cd)pyrene			Pass	Pass	Pass	Pass
Naphthalene			Pass	Pass	Pass	Pass
Phenanthrene			Pass	Pass	Pass	Pass
Pyrene			Pass	Pass	Pass	Pass

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p-Terphenyl-d14 (Surr.)	%		86	96	99	97
aldrin			Pass	Pass	Pass	Pass
a-BHC			Pass	Pass	Pass	Pass
b-BHC			Pass	Pass	Pass	Pass
d-BHC			Pass	Pass	Pass	Pass
g-BHC (lindane)			Pass	Pass	Pass	Pass
cis-chlordane			Pass	Pass	Pass	Pass
trans-chlordane			Pass	Pass	Pass	Pass
4,4'-DDD			Pass	Pass	Pass	Pass
4,4'-DDE			Pass	Pass	Pass	Pass
4,4'-DDT			Pass	Pass	Pass	Pass
dieldrin			Pass	Pass	Pass	Pass
endosulfan I			Pass	Pass	Pass	Pass
endosulfan II			Pass	Pass	Pass	Pass
endosulfan sulfate			Pass	Pass	Pass	Pass
endrin			Pass	Pass	Pass	Pass
endrin aldehyde			Pass	Pass	Pass	Pass
endrin ketone			Pass	Pass	Pass	Pass
heptachlor			Pass	Pass	Pass	Pass
heptachlor epoxide			Pass	Pass	Pass	Pass
hexachlorobenzene			Pass	Pass	Pass	Pass
methoxychlor			Pass	Pass	Pass	Pass
TCMX (Surr.)	%		110	116	104	95
chlorpyrifos			Pass	Pass	Pass	Pass
chlorpyrifos methyl			Pass	Pass	Pass	Pass
diazinon			Pass	Pass	Pass	Pass
fenchlorphos			Pass	Pass	Pass	Pass
methyl parathion			Pass	Pass	Pass	Pass
prophos			Pass	Pass	Pass	Pass
tributylphosphorotrithioite			Pass	Pass	Pass	Pass
Aroclor 1016			Pass	Pass	Pass	Pass
Aroclor 1221			Pass	Pass	Pass	Pass

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Aroclor 1232			Pass	Pass	Pass	Pass
Aroclor 1242			Pass	Pass	Pass	Pass
Aroclor 1248			Pass	Pass	Pass	Pass
Aroclor 1254			Pass	Pass	Pass	Pass
Aroclor 1260			Pass	Pass	Pass	Pass
2-fluorobiphenyl (Surr.)	%		104	118	105	96
		Sample ID:	**D202300788303**	**D202300789203**	**D202300790303**	**D202300791303**
		Sample Name	**DSI_TP125_0-0.2**	**DSI_TP135_0.1-0.2**	**DSI_TP151_0-0.2**	**DSI_TP161_0.1-0.2**
Parameter	***Units***	***PQL***				
ESA-P-ORG(3,8)						
>C10-C16			Pass	Pass	Pass	Pass
>C16-C34			Pass	Pass	Pass	Pass
>C34-C40			Pass	Pass	Pass	Pass
>C10-C14			Pass	Pass	Pass	Pass
>C15-C28			Pass	Pass	Pass	Pass
>C29-C36			Pass	Pass	Pass	Pass
		Sample ID:	**D202300788304**	**D202300789204**	**D202300790304**	**D202300791304**
		Sample Name	**DSI_TP125_0-0.2**	**DSI_TP135_0.1-0.2**	**DSI_TP151_0-0.2**	**DSI_TP161_0.1-0.2**
Parameter	***Units***	***PQL***				
ESA-MP-01,ICP-01						
Arsenic			Pass	Pass	Pass	Pass
Cadmium			Pass	Pass	Pass	Pass
Chromium			Pass	Pass	Pass	Pass
Copper			Pass	Pass	Pass	Pass
Lead			Pass	Pass	Pass	Pass
Mercury			Pass	Pass	Pass	Pass
Nickel			Pass	Pass	Pass	Pass
Zinc			Pass	Pass	Pass	Pass

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	Sample ID:	D202300788801
	Sample Name	DSI_TP129_0.1-0.2

Parameter	Units	PQL	
ESA-P-ORG16			
PFBA			Pass
PFPeA			Pass
PFBS			Pass
PFHxA			Pass
PFPeS			Pass
PFHpA			Pass
PFOA			Pass
PFHpS			Pass
PFOS			Pass
PFDA			Pass
PFUdA			Pass
PFDoA			Pass
PFTrDA			Pass
PFTeDA			Pass
PFNA			Pass
PFHxS			Pass
MPFBA	%		81
M3PFBS	%		83
MPFOS	%		120
MPFHxA	%		80
MPFOA	%		109
MPFUdA	%		111

	Sample ID:	Q2023001770	Q2023001778
	Sample Name		

Parameter	Units	PQL	BTEX Blank - Soil	BTEX Blank - Soil
ESA-P-ORG7 & ORG8				
Benzene	mg/kg	0.5	<0.50	<0.50

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Toluene	mg/kg	0.5	<0.50	<0.50
Ethylbenzene	mg/kg	1	<1.0	<1.0
m.p Xylene	mg/kg	2	<2.0	<2.0
o Xylene	mg/kg	1	<1.0	<1.0
C6-C10	mg/kg	35	<35	<35
C6-C9	mg/kg	25	<25	<25
		Sample ID:	**Q2023001771**	**Q2023001779**
		Sample Name		

Parameter	***Units***	***PQL***	BTEX Blank Sp-Soil	BTEX Blank Sp-Soil
ESA-P-ORG7 & ORG8				
Benzene	%		125	130
Toluene	%		109	112
Ethylbenzene	%		100	103
m.p Xylene	%		93	96
o Xylene	%		92	95
Fluorobenzene (Surr.)	%		87	90
		Sample ID:	**Q2023001772**	**Q2023001780**
		Sample Name		

Parameter	***Units***	***PQL***	PCB Blank - Soil	PCB Blank - Soil
ESA-P-ORG(12 - 15)				
Acenaphthene	mg/kg	0.3	<0.30	<0.30
Acenaphthylene	mg/kg	0.3	<0.30	<0.30
Anthracene	mg/kg	0.3	<0.30	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30	<0.30
Chrysene	mg/kg	0.3	<0.30	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30	<0.30
Fluoranthene	mg/kg	0.3	<0.30	<0.30
Fluorene	mg/kg	0.3	<0.30	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30	<0.30

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Naphthalene	mg/kg	0.3	<0.30	<0.30
Phenanthrene	mg/kg	0.3	<0.30	<0.30
Pyrene	mg/kg	0.3	<0.30	<0.30
aldrin	mg/kg	0.1	<0.10	<0.10
a-BHC	mg/kg	0.1	<0.10	<0.10
b-BHC	mg/kg	0.1	<0.10	<0.10
d-BHC	mg/kg	0.1	<0.10	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10	<0.10
cis-chlordane	mg/kg	0.1	<0.10	<0.10
trans-chlordane	mg/kg	0.1	<0.10	<0.10
4,4'-DDD	mg/kg	0.1	<0.10	<0.10
4,4'-DDE	mg/kg	0.1	<0.10	<0.10
4,4'-DDT	mg/kg	0.1	<0.10	<0.10
dieldrin	mg/kg	0.1	<0.10	<0.10
endosulfan I	mg/kg	0.2	<0.20	<0.20
endosulfan II	mg/kg	0.2	<0.20	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10	<0.10
endrin	mg/kg	0.2	<0.20	<0.20
endrin aldehyde	mg/kg	0.1	<0.10	<0.10
endrin ketone	mg/kg	0.1	<0.10	<0.10
heptachlor	mg/kg	0.1	<0.10	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10	<0.10
methoxychlor	mg/kg	0.1	<0.10	<0.10
chlorpyrifos	mg/kg	0.1	<0.10	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10	<0.10
diazinon	mg/kg	0.1	<0.10	<0.10
fenchlorphos	mg/kg	0.1	<0.10	<0.10
methyl parathion	mg/kg	0.1	<0.10	<0.10
prophos	mg/kg	0.1	<0.10	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10	<0.10
Aroclor 1016	mg/kg	0.5	<0.50	<0.50

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Aroclor 1221	mg/kg	0.5	<0.50	<0.50
Aroclor 1232	mg/kg	0.5	<0.50	<0.50
Aroclor 1242	mg/kg	0.5	<0.50	<0.50
Aroclor 1248	mg/kg	0.5	<0.50	<0.50
Aroclor 1254	mg/kg	0.5	<0.50	<0.50
Aroclor 1260	mg/kg	0.5	<0.50	<0.50
		Sample ID:	**Q2023001773**	**Q2023001781**
		Sample Name		

Parameter	***Units***	***PQL***	PCB Blank Sp - Soil	PCB Blank Sp - Soil
ESA-P-ORG(12 - 15)				
Acenaphthene	%		105	107
Anthracene	%		120	120
Fluoranthene	%		110	110
Naphthalene	%		121	121
Phenanthrene	%		116	117
Pyrene	%		111	113
p-Terphenyl-d14 (Surr.)	%		87	90
aldrin	%		139	136
endrin	%		118	133
hexachlorobenzene	%		120	126
TCMX (Surr.)	%		103	99
chlorpyrifos	%		136	128
diazinon	%		108	106
2-fluorobiphenyl (Surr.)	%		104	101
Aroclor 1016	%		95	99
		Sample ID:	**Q2023001774**	**Q2023001782**
		Sample Name		

Parameter	***Units***	***PQL***	TRH Blank-Soil	TRH Blank-Soil
ESA-P-ORG(3,8)				
>C10-C16	mg/kg	50	<50	<50
>C16-C34	mg/kg	100	<100	<100
>C34-C40	mg/kg	100	<100	<100

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>C10-C14	mg/kg	50	<50	<50
>C15-C28	mg/kg	100	<100	<100
>C29-C36	mg/kg	100	<100	<100

	Sample ID:	**Q2023001775**	**Q2023001783**
	Sample Name		
Parameter	***Units***	***PQL***	TRH Blank Spike-Soil	TRH Blank Spike-Soil
ESA-P-ORG(3,8)				
>C10-C16	%		101	100
>C10-C14	%		97	95

	Sample ID:	**Q2023001776**
	Sample Name	
Parameter	***Units***	***PQL***	PFAS Blank - Soil
ESA-P-ORG16			
PFBA	ug/kg	5	<5
PFPeA	ug/kg	5	<5
PFBS	ug/kg	5	<5
PFHxA	ug/kg	5	<5
PFPeS	ug/kg	5	<5
PFHpA	ug/kg	5	<5
PFOA	ug/kg	5	<5
PFHpS	ug/kg	5	<5
PFOS	ug/kg	5	<5
PFDA	ug/kg	5	<5
PFUdA	ug/kg	5	<5
PFDoA	ug/kg	5	<5
PFTrDA	ug/kg	5	<5
PFTeDA	ug/kg	5	<5
PFNA	ug/kg	5	<5
PFHxS	ug/kg	5	<5
MPFBA (Surr.)	%		78
M3PFBS (Surr.)	%		72

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MPFOS (Surr.)	%		106
MPFHxA (Surr.)	%		103
MPFOA (Surr.)	%		88
MPFUdA (Surr.)	%		95

Sample ID:	**Q2023001777**
Sample Name	

Parameter	*Units*	*PQL*	PFAS Blank Sp - Soil
ESA-P-ORG16			
PFBA	%		116
PFPeA	%		127
PFBS	%		104
PFHxA	%		117
PFPeS	%		120
PFHpA	%		89
PFOA	%		119
PFHpS	%		129
PFOS	%		96
PFDA	%		76
PFUdA	%		77
PFDoA	%		71
PFTrDA	%		100
PFTeDA	%		129
PFNA	%		129
PFHxS	%		113
MPFBA (Surr.)	%		73
M3PFBS (Surr.)	%		85
MPFOS (Surr.)	%		120
MPFHxA (Surr.)	%		104
MPFOA (Surr.)	%		124
MPFUdA (Surr.)	%		78

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Sample ID:	Q2023001790	Q2023001792
Sample Name		

Parameter	Units	PQL	Metals Blank - Soil	Metals Blank - Soil
ESA-MP-01,ICP-01				
Arsenic	mg/kg	5	<5.0	<5.0
Cadmium	mg/kg	0.3	<0.30	<0.30
Chromium	mg/kg	1	<1.0	<1.0
Copper	mg/kg	5	<5.0	<5.0
Lead	mg/kg	5	<5.0	<5.0
Mercury	mg/kg	0.1	<0.10	<0.10
Nickel	mg/kg	1	<1.0	<1.0
Zinc	mg/kg	5	<5.0	<5.0

Sample ID:	Q2023001791	Q2023001793
Sample Name		

Parameter	Units	PQL	Metals Blank Sp-Soil	Metals Blank Sp-Soil
ESA-MP-01,ICP-01				
Arsenic	%		97	94
Cadmium	%		105	100
Chromium	%		100	98
Copper	%		98	96
Lead	%		102	101
Mercury	%		76	76
Nickel	%		101	100
Zinc	%		102	97

Sample ID:	S202300785903
Sample Name	

Parameter	Units	PQL	
ESA-MP-01,ICP-01			
Arsenic	%		113

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	Sample ID:	S202300788201	S202300790201
	Sample Name	DSI_TP123_0.3-0.4	DSI_TP149_0.4-0.5
Parameter	Units	PQL		
ESA-P-ORG-07 & 08				
Benzene	%		134	136
Toluene	%		117	118
Ethylbenzene	%		108	108
m.p Xylene	%		101	101
o Xylene	%		100	100
Fluorobenzene (Surr.)	%		92	94

	Sample ID:	S202300788202	S202300790202
	Sample Name	DSI_TP123_0.3-0.4	DSI_TP149_0.4-0.5
Parameter	Units	PQL		
ESA-P-ORG(12 - 15)				
Acenaphthene	%		107	103
Anthracene	%		120	118
Fluoranthene	%		105	110
Naphthalene	%		118	117
Phenanthrene	%		115	113
Pyrene	%		105	113
p-Terphenyl-d14 (Surr.)	%		82	94
aldrin	%		136	132
endrin	%		118	132
hexachlorobenzene	%		114	121
TCMX (Surr.)	%		101	98
chlorpyrifos	%		132	135
diazinon	%		107	105
Aroclor 1016	%		94	100
2-fluorobiphenyl (Surr.)	%		104	98

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	Sample ID:	S202300788203	S202300790203
	Sample Name	DSI_TP123_0.3-0.4	DSI_TP149_0.4-0.5
Parameter	Units	PQL		
ESA-P-ORG(3,8)				
>C10-C16	%		96	96
>C10-C14	%		92	93

	Sample ID:	S202300788204
	Sample Name	DSI_TP123_0.3-0.4
Parameter	Units	PQL	
ESA-P-ORG16			
PFBA	%		116
PFPeA	%		130
PFBS	%		105
PFHxA	%		111
PFPeS	%		121
PFHpA	%		81
PFOA	%		112
PFHpS	%		125
PFOS	%		104
PFDA	%		86
PFUdA	%		71
PFDoA	%		91
PFTrDA	%		119
PFTeDA	%		110
PFNA	%		105
PFHxS	%		105
MPFBA (Surr.)	%		84
M3PFBS (Surr.)	%		80
MPFOS (Surr.)	%		117
MPFHxA (Surr.)	%		80
MPFOA (Surr.)	%		104
MPFUdA (Surr.)	%		129

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	Sample ID:	S202300788205	S202300790204
	Sample Name	DSI_TP123_0.3-0.4	DSI_TP149_0.4-0.5

Parameter	Units	PQL		
ESA-MP-01,ICP-01				
Arsenic	%		89	-
Cadmium	%		110	100
Chromium	%		99	119
Copper	%		98	122
Lead	%		109	97
Mercury	%		74	75
Nickel	%		90	111
Zinc	%		117	111

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Batch Number : 2301197

Report Number : A101023.0120.00 (090-101)

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A.C.N. 093 452 950
Unit 4/10-11 Millennium Court,
Silverwater 2128
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Accreditation No.14664
Accredited for compliance with ISO/IEC 17025 - Testing.

This certificate of analysis contains General Comments and Analytical Results. Quality Control Report and Laboratory Quality Acceptance Criteria have been issued separately.

This report supersedes any previous report(s) with this reference. This document shall not be reproduced, except in full.

This report has been electronically signed by authorised signatories below.

Authorised By

Kaiyu Li

General Comments

Samples are analysed on as received basis. Sampling is not covered by NATA accreditation.

Where moisture determination has been performed, results are reported on dry weight basis.

Where the PQL of reported result differs from standard PQL, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Samples were analysed within holding time described by laboratory internal procedures if not stated otherwise. If samples delivered do not meet required analytical criteria, results will be marked with ^.

However surrogate standards are added to samples, results are not corrected for standards recoveries.

Analysis of VOC in water samples are performed on unfiltered waters (as received) spiked with surrogates and injection standards only.

SLS is responsible for all the information in the report, except that provided by the customer.

All sampling information included in the report has been provided by customer.

Information provided by the customer can affect the validity of the results.

Certificate of Analysis

Contact:	Andrew Hunt	**Date Reported:**	5/04/2023
Customer:	ADE Consulting Group	**No. of Samples:**	10
Address:	Unit 6 7 Millennium Court Silverwater NSW	**Date Received:**	29/03/2023
		Date of Analysis:	29/03/2023

Cust Ref: A101023.0120.00 002 L05

Glossary:

*NATA accreditation does not cover the performance of this service
ND-not detected,
NT-not tested
INS-Insufficient material to perform the test
LCS-Laboratory Control Sample
RPD-Relative Percent Difference
N/A-Not Applicable
< less than
> greater than
PQL- Practical Quantitation Limit
^Analytical result might be compromised due to sample condition or holding time requirements
Reaction rate 1 = Slight
Reaction rate 2 = Moderate
Reaction rate 3 = High
Reaction rate 4 = Vigorous

Certificate of Analysis

	Sample ID:	2023008090	2023008093	2023008094	2023008095	2023008096	2023008097	2023008098	2023008099	2023008100	2023008101
	Sample Name	DSI1.TP109_0.2-0.3	DSI1.TP111_0.3-0.4	DSI1.TP113_0.2-0.3	DSI1.TP113_0.5-0.6	DSI1.TP115_0.2-0.3	DSI1.TP117_0-0.1	DSI1.TP119_0.1-0.3	DSI1.TP119_0.6-0.7	DSI1.TP121_0.3-0.4	DSI1. BR3
Parameter	*Units*	*PQL*	Sample Date: 27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
ESA-P-ORG7 & ORG8											
Benzene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m.p Xylene	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o Xylene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sum of BTEX	mg/kg	2	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Total Xylenes	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Fluorobenzene (Surr.)	%		97	98	98	95	96	93	96	89	96	99
C6-C10	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C10 minus BTEX	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C9	mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
ESA-MP-01,ICP-01											
Arsenic	mg/kg	5	<5.0	<5.0	6.0	7.2	5.7	7.3	15.4	12.1	8.8	<5.0
Cadmium	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chromium	mg/kg	1	38.6	32.5	26.3	36.0	30.5	28.0	23.7	33.9	32.5	25.7
Copper	mg/kg	5	45.9	123.5	47.0	40.9	38.5	21.3	25.3	21.2	30.9	24.6
Lead	mg/kg	5	26.0	23.8	31.4	27.9	29.7	26.0	21.9	36.3	21.3	15.7
Mercury	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel	mg/kg	1	43.9	36.5	34.3	30.7	35.0	21.9	4.9	19.5	29.2	20.2
Zinc	mg/kg	5	126.5	117.2	119.5	81.3	96.1	47.3	20.5	31.9	65.6	38.2
ESA-P-12											
% Moisture Content	%		11.7	10.4	13.4	16.9	12.9	15.0	13.8	13.4	16.8	17.2
ESA-P-ORG(12 - 15)											
Acenaphthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

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Certificate of Analysis

	Sample ID:	2023008090	2023008093	2023008094	2023008095	2023008096	2023008097	2023008098	2023008099	2023008100	2023008101
	Sample Name	DSI1.TP109_0.2-0.3	DSI1.TP111_0.3-0.4	DSI1.TP113_0.2-0.3	DSI1.TP113_0.5-0.6	DSI1.TP115_0.2-0.3	DSI1.TP117_0-0.1	DSI1.TP119_0.1-0.3	DSI1.TP119_0.6-0.7	DSI1.TP121_0.3-0.4	DSI1. BR3
Parameter	**Units**	**PQL**	Sample Date: 27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
Acenaphthylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chrysene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluorene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Naphthalene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Phenanthrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Sum of Positive PAHs	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Half PQL)	mg/kg	0.3	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Benzo(a)pyrene TEQ (PQL)	mg/kg	0.3	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
p-Terphenyl-d14 (Surr.)	%		138	133	119	103	135	94	127	106	100	105
aldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
a-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
b-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
d-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
cis-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
trans-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

Certificate of Analysis

	Sample ID:	2023008090	2023008093	2023008094	2023008095	2023008096	2023008097	2023008098	2023008099	2023008100	2023008101
	Sample Name	DSI1.TP109_0.2-0.3	DSI1.TP111_0.3-0.4	DSI1.TP113_0.2-0.3	DSI1.TP113_0.5-0.6	DSI1.TP115_0.2-0.3	DSI1.TP117_0-0.1	DSI1.TP119_0.1-0.3	DSI1.TP119_0.6-0.7	DSI1.TP121_0.3-0.4	DSI1. BR3
Parameter	Units	PQL	Sample Date: 27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
4,4'-DDD	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDE	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDT	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
dieldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endosulfan I	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan II	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endrin aldehyde	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin ketone	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methoxychlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
TCMX (Surr.)	%		136	92	83	72	93	65	137	75	71	73
chlorpyrifos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
diazinon	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
fenchlorphos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methyl parathion	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
prophos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Aroclor 1016	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1221	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1232	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1242	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

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Certificate of Analysis

	Sample ID:	2023008090	2023008093	2023008094	2023008095	2023008096	2023008097	2023008098	2023008099	2023008100	2023008101
	Sample Name	DSI1.TP109_0.2-0.3	DSI1.TP111_0.3-0.4	DSI1.TP113_0.2-0.3	DSI1.TP113_0.5-0.6	DSI1.TP115_0.2-0.3	DSI1.TP117_0-0.1	DSI1.TP119_0.1-0.3	DSI1.TP119_0.6-0.7	DSI1.TP121_0.3-0.4	DSI1. BR3
Parameter	***Units***	***PQL***	Sample Date: 27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
Aroclor 1248	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1254	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1260	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-fluorobiphenyl (Surr.)	%		120	109	99	86	110	78	132	88	83	85

Certificate of Analysis

	Sample ID:	2023008090	2023008093	2023008094	2023008095	2023008096	2023008097	2023008098	2023008099	2023008100	2023008101
	Sample Name	DSI1.TP109_0.2-0.3	DSI1.TP111_0.3-0.4	DSI1.TP113_0.2-0.3	DSI1.TP113_0.5-0.6	DSI1.TP115_0.2-0.3	DSI1.TP117_0-0.1	DSI1.TP119_0.1-0.3	DSI1.TP119_0.6-0.7	DSI1.TP121_0.3-0.4	DSI1. BR3
Parameter	Units	PQL	Sample Date: 27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
ESA-P-ORG16												
PFBA	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFPeA	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFBS	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFHxA	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFPeS	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFHpA	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFOA	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFHpS	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFOS	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFDA	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFUdA	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFDoA	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFTrDA	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFTeDA	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFNA	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
PFHxS	ug/kg	5	-	-	<5	-	-	-	-	<5	-	-
MPFBA (Surr.)	%		-	-	101	-	-	-	-	88	-	-
M3PFBS (Surr.)	%		-	-	76	-	-	-	-	71	-	-
MPFOS (Surr.)	%		-	-	109	-	-	-	-	84	-	-
MPFHxA (Surr.)	%		-	-	80	-	-	-	-	108	-	-
MPFOA (Surr.)	%		-	-	118	-	-	-	-	77	-	-
MPFUdA (Surr.)	%		-	-	112	-	-	-	-	103	-	-

Certificate of Analysis

	Sample ID:	2023008090	2023008093	2023008094	2023008095	2023008096	2023008097	2023008098	2023008099	2023008100	2023008101
	Sample Name	DSI1.TP109_0.2-0.3	DSI1.TP111_0.3-0.4	DSI1.TP113_0.2-0.3	DSI1.TP113_0.5-0.6	DSI1.TP115_0.2-0.3	DSI1.TP117_0-0.1	DSI1.TP119_0.1-0.3	DSI1.TP119_0.6-0.7	DSI1.TP121_0.3-0.4	DSI1. BR3
Parameter	**Units**	**PQL**	Sample Date: 27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
ESA-P-ORG(3,8)												
>C10-C16	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C16-C34	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C34-C40	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C40 (Sum of total)	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C14	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C15-C28	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C29-C36	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C10-C36 (Sum of total)	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100

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Accreditation No.14664
Accredited for compliance with ISO/IEC 17025 - Testing.

This Quality Control Report contains results of QAQC samples analysis and the Laboratory Acceptance Criteria.

This report supersedes any previous report(s) with this reference. This document shall not be reproduced, except in full.

This report has been electronically signed by authorised signatories below.

Authorised By

Kaiyu Li

General Comments

Duplicate samples and matrix spike may not be prepared on smaller jobs, however are analysed at frequency. QAQC samples shown within the report as e.g. Batch Blank, Batch Matrix Spike were performed on samples not reported on that Certificate of Analysis.

Blank This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in the same manner as for samples.
Duplicate This is the interlaboratory split of a random sample from the processed batch
Matrix Spike A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class.
Surr. (Surrogate Spike) Surrogates are known additions to each sample, blank and matrix spike or LCS in a batch. Surrogates are chosen as a compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Blank shall be < PQL
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals/PFAS, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits
RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the PQL : No Limit
Results between 10-20 times the PQL : RPD must lie between 0-50%
Results >20 times the PQL : RPD must lie between 0-30%
Surrogate Recoveries : Recoveries must lie between 50-150%

SLS is responsible for all the information in the report, except that provided by the customer.

All sampling information included in the report has been provided by customer.

Information provided by the customer can affect the validity of the results.

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Quality Control Report

Contact:	Andrew Hunt	**Date Reported:**	5/04/2023
Customer:	ADE Consulting Group	**No. of Samples:**	26
Address:	Unit 6 7 Millennium Court Silverwater NSW	**Date Received:**	29/03/2023
		Date of Analysis:	29/03/2023

Cust Ref: A101023.0120.00 002 L05

Glossary:

*NATA accreditation does not cover the performance of this service
ND-not detected,
NT-not tested
INS-Insufficient material to perform the test
LCS-Laboratory Control Sample
RPD-Relative Percent Difference
N/A-Not Applicable
< less than
> greater than
PQL- Practical Quantitation Limit
^Analytical result might be compromised due to sample condition or holding time requirements
Reaction rate 1 = Slight
Reaction rate 2 = Moderate
Reaction rate 3 = High
Reaction rate 4 = Vigorous

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Quality Control Report

	Sample ID:	D202300805701	D202300810801
	Sample Name	DSI2.TP203_0.1-0.2	WAC349.TP4
Parameter	Units	PQL		
ESA-P-ORG16				
PFBA			Pass	Pass
PFPeA			Pass	Pass
PFBS			Pass	Pass
PFHxA			Pass	Pass
PFPeS			Pass	Pass
PFHpA			Pass	Pass
PFOA			Pass	Pass
PFHpS			Pass	Pass
PFOS			Pass	Pass
PFDA			Pass	Pass
PFUdA			Pass	Pass
PFDoA			Pass	Pass
PFTrDA			Pass	Pass
PFTeDA			Pass	Pass
PFNA			Pass	Pass
PFHxS			Pass	Pass
MPFBA	%		78	111
M3PFBS	%		83	78
MPFOS	%		127	91
MPFHxA	%		77	112
MPFOA	%		108	81
MPFUdA	%		75	112

	Sample ID:	D202300807101	D202300809001
	Sample Name	DSI2.TP211_0.5-0.6	DSI1.TP109_0.2-0.3
Parameter	Units	PQL		
ESA-P-ORG7 & ORG8				
Benzene			Pass	Pass

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Toluene			Pass	Pass
Ethylbenzene			Pass	Pass
m.p Xylene			Pass	Pass
o Xylene			Pass	Pass
Fluorobenzene (Surr.)	%		92	97
C6-C10			Pass	Pass
C6-C9			Pass	Pass

		Sample ID:	**D202300807102**	**D202300809002**
		Sample Name	**DSI2.TP211_0.5-0.6**	**DSI1.TP109_0.2-0.3**
Parameter	***Units***	***PQL***	27/03/2023	Sample Date: 27/03/2023
ESA-P-ORG(12 - 15)				
Acenaphthene			Pass	Pass
Acenaphthylene			Pass	Pass
Anthracene			Pass	Pass
Benzo[a]anthracene			Pass	Pass
Benzo[a]pyrene			Pass	Pass
Benzo[g,h,i]perylene			Pass	Pass
Benzo[b,k]fluoranthene			Pass	Pass
Chrysene			Pass	Pass
Dibenzo[a,h]anthracene			Pass	Pass
Fluoranthene			Pass	Pass
Fluorene			Pass	Pass
Indeno(1,2,3-cd)pyrene			Pass	Pass
Naphthalene			Pass	Pass
Phenanthrene			Pass	Pass
Pyrene			Pass	Pass
p-Terphenyl-d14 (Surr.)	%		108	104
aldrin			Pass	Pass
a-BHC			Pass	Pass
b-BHC			Pass	Pass
d-BHC			Pass	Pass
g-BHC (lindane)			Pass	Pass

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cis-chlordane			Pass	Pass
trans-chlordane			Pass	Pass
4,4'-DDD			Pass	Pass
4,4'-DDE			Pass	Pass
4,4'-DDT			Pass	Pass
dieldrin			Pass	Pass
endosulfan I			Pass	Pass
endosulfan II			Pass	Pass
endosulfan sulfate			Pass	Pass
endrin			Pass	Pass
endrin aldehyde			Pass	Pass
endrin ketone			Pass	Pass
heptachlor			Pass	Pass
heptachlor epoxide			Pass	Pass
hexachlorobenzene			Pass	Pass
methoxychlor			Pass	Pass
TCMX (Surr.)	%		74	72
chlorpyrifos			Pass	Pass
chlorpyrifos methyl			Pass	Pass
diazinon			Pass	Pass
fenchlorphos			Pass	Pass
methyl parathion			Pass	Pass
prophos			Pass	Pass
tributylphosphorotrithioite			Pass	Pass
Aroclor 1016			Pass	Pass
Aroclor 1221			Pass	Pass
Aroclor 1232			Pass	Pass
Aroclor 1242			Pass	Pass
Aroclor 1248			Pass	Pass
Aroclor 1254			Pass	Pass
Aroclor 1260			Pass	Pass
2-fluorobiphenyl (Surr.)	%		87	87

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	Sample ID:	D202300807103	D202300809003
	Sample Name	DSI2.TP211_0.5-0.6	DSI1.TP109_0.2-0.3

Parameter	Units	PQL	27/03/2023	Sample Date: 27/03/2023
ESA-P-ORG(3,8)				
>C10-C16			Pass	Pass
>C16-C34			Pass	Pass
>C34-C40			Pass	Pass
>C10-C14			Pass	Pass
>C15-C28			Pass	Pass
>C29-C36			Pass	Pass

	Sample ID:	D202300807104	D202300809004
	Sample Name	DSI2.TP211_0.5-0.6	DSI1.TP109_0.2-0.3

Parameter	Units	PQL	27/03/2023	Sample Date: 27/03/2023
ESA-MP-01,ICP-01				
Arsenic			Pass	Pass
Cadmium			Pass	Pass
Chromium			Pass	Pass
Copper			Pass	Pass
Lead			Pass	Pass
Mercury			Pass	Pass
Nickel			Pass	Pass
Zinc			Pass	Pass

	Sample ID:	Q2023001822
	Sample Name	

Parameter	Units	PQL	PFAS Blank - Soil
ESA-P-ORG16			
PFBA	ug/kg	5	<5
PFPeA	ug/kg	5	<5
PFBS	ug/kg	5	<5
PFHxA	ug/kg	5	<5
PFPeS	ug/kg	5	<5

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PFHpA	ug/kg	5	<5
PFOA	ug/kg	5	<5
PFHpS	ug/kg	5	<5
PFOS	ug/kg	5	<5
PFDA	ug/kg	5	<5
PFUdA	ug/kg	5	<5
PFDoA	ug/kg	5	<5
PFTrDA	ug/kg	5	<5
PFTeDA	ug/kg	5	<5
PFNA	ug/kg	5	<5
PFHxS	ug/kg	5	<5
MPFBA (Surr.)	%		101
M3PFBS (Surr.)	%		81
MPFOS (Surr.)	%		89
MPFHxA (Surr.)	%		84
MPFOA (Surr.)	%		79
MPFUdA (Surr.)	%		126

Sample ID: **Q2023001823**

Sample Name

Parameter	***Units***	***PQL***	PFAS Blank Sp - Soil
ESA-P-ORG16			
PFBA	%		110
PFPeA	%		122
PFBS	%		97
PFHxA	%		117
PFPeS	%		118
PFHpA	%		91
PFOA	%		125
PFHpS	%		128
PFOS	%		98
PFDA	%		86

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PFUdA	%		122
PFDoA	%		125
PFTrDA	%		120
PFTeDA	%		115
PFNA	%		127
PFHxS	%		108
MPFBA (Surr.)	%		88
M3PFBS (Surr.)	%		79
MPFOS (Surr.)	%		115
MPFHxA (Surr.)	%		75
MPFOA (Surr.)	%		73
MPFUdA (Surr.)	%		86

Sample ID: **Q2023001824**

Sample Name

Parameter	***Units***	***PQL***	BTEX Blank - Soil
ESA-P-ORG7 & ORG8			
Benzene	mg/kg	0.5	<0.50
Toluene	mg/kg	0.5	<0.50
Ethylbenzene	mg/kg	1	<1.0
m.p Xylene	mg/kg	2	<2.0
o Xylene	mg/kg	1	<1.0
C6-C10	mg/kg	35	<35
C6-C9	mg/kg	25	<25

Sample ID: **Q2023001825**

Sample Name

Parameter	***Units***	***PQL***	BTEX Blank Sp-Soil
ESA-P-ORG7 & ORG8			
Benzene	%		119
Toluene	%		108
Ethylbenzene	%		98
m.p Xylene	%		95
o Xylene	%		94

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Fluorobenzene (Surr.)	%		87

		Sample ID:	**Q2023001826**
		Sample Name	
Parameter	***Units***	***PQL***	PCB Blank - Soil
ESA-P-ORG(12 - 15)			
Acenaphthene	mg/kg	0.3	<0.30
Acenaphthylene	mg/kg	0.3	<0.30
Anthracene	mg/kg	0.3	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30
Chrysene	mg/kg	0.3	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30
Fluoranthene	mg/kg	0.3	<0.30
Fluorene	mg/kg	0.3	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30
Naphthalene	mg/kg	0.3	<0.30
Phenanthrene	mg/kg	0.3	<0.30
Pyrene	mg/kg	0.3	<0.30
aldrin	mg/kg	0.1	<0.10
a-BHC	mg/kg	0.1	<0.10
b-BHC	mg/kg	0.1	<0.10
d-BHC	mg/kg	0.1	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10
cis-chlordane	mg/kg	0.1	<0.10
trans-chlordane	mg/kg	0.1	<0.10
4,4'-DDD	mg/kg	0.1	<0.10
4,4'-DDE	mg/kg	0.1	<0.10
4,4'-DDT	mg/kg	0.1	<0.10
dieldrin	mg/kg	0.1	<0.10
endosulfan I	mg/kg	0.2	<0.20

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endosulfan II	mg/kg	0.2	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10
endrin	mg/kg	0.2	<0.20
endrin aldehyde	mg/kg	0.1	<0.10
endrin ketone	mg/kg	0.1	<0.10
heptachlor	mg/kg	0.1	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10
methoxychlor	mg/kg	0.1	<0.10
chlorpyrifos	mg/kg	0.1	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10
diazinon	mg/kg	0.1	<0.10
fenchlorphos	mg/kg	0.1	<0.10
methyl parathion	mg/kg	0.1	<0.10
prophos	mg/kg	0.1	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10
Aroclor 1016	mg/kg	0.5	<0.50
Aroclor 1221	mg/kg	0.5	<0.50
Aroclor 1232	mg/kg	0.5	<0.50
Aroclor 1242	mg/kg	0.5	<0.50
Aroclor 1248	mg/kg	0.5	<0.50
Aroclor 1254	mg/kg	0.5	<0.50
Aroclor 1260	mg/kg	0.5	<0.50

			Sample ID:
			Sample Name
Parameter	***Units***	***PQL***	PCB Blank Sp - Soil
ESA-P-ORG(12 - 15)			
Acenaphthene	%		97
Anthracene	%		100
Fluoranthene	%		92
Naphthalene	%		103
Phenanthrene	%		97

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Pyrene	%		94
p-Terphenyl-d14 (Surr.)	%		105
aldrin	%		106
endrin	%		98
hexachlorobenzene	%		89
TCMX (Surr.)	%		76
chlorpyrifos	%		107
diazinon	%		91
2-fluorobiphenyl (Surr.)	%		91
Aroclor 1016	%		102

Sample ID: **Q2023001828**

Sample Name

Parameter	***Units***	***PQL***	TRH Blank-Soil
ESA-P-ORG(3,8)			
>C10-C16	mg/kg	50	<50
>C16-C34	mg/kg	100	<100
>C34-C40	mg/kg	100	<100
>C10-C14	mg/kg	50	<50
>C15-C28	mg/kg	100	<100
>C29-C36	mg/kg	100	<100

Sample ID: **Q2023001829**

Sample Name

Parameter	***Units***	***PQL***	TRH Blank Spike-Soil
ESA-P-ORG(3,8)			
>C10-C16	%		98
>C10-C14	%		93

Sample ID: **Q2023001844**

Sample Name

Parameter	***Units***	***PQL***	Metals Blank - Soil
ESA-MP-01,ICP-01			
Arsenic	mg/kg	5	5.0

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Cadmium	mg/kg	0.3	<0.30
Chromium	mg/kg	1	<1.0
Copper	mg/kg	5	<5.0
Lead	mg/kg	5	<5.0
Mercury	mg/kg	0.1	<0.10
Nickel	mg/kg	1	<1.0
Zinc	mg/kg	5	<5.0

Sample ID: **Q2023001845**

Sample Name

Parameter	***Units***	***PQL***	Metals Blank Sp-Soil
ESA-MP-01,ICP-01			
Arsenic	%		95
Cadmium	%		94
Chromium	%		91
Copper	%		88
Lead	%		95
Mercury	%		88
Nickel	%		94
Zinc	%		95

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Sample ID:	S202300805501
Sample Name	DSI2.TP201_0.2-0.3

Parameter	*Units*	*PQL*	
ESA-P-ORG16			
PFBA	%		113
PFPeA	%		121
PFBS	%		92
PFHxA	%		112
PFPeS	%		116
PFHpA	%		85
PFOA	%		118
PFHpS	%		121
PFOS	%		94
PFDA	%		79
PFUdA	%		115
PFDoA	%		113
PFTrDA	%		82
PFTeDA	%		125
PFNA	%		108
PFHxS	%		97
MPFBA (Surr.)	%		108
M3PFBS (Surr.)	%		118
MPFOS (Surr.)	%		111
MPFHxA (Surr.)	%		106
MPFOA (Surr.)	%		76
MPFUdA (Surr.)	%		102

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Sample ID: **S202300807001**

Sample Name **DSI2.TP211_0.1-0.2**

Parameter	*Units*	*PQL*	
ESA-P-ORG-07 & 08			
Benzene	%		124
Toluene	%		111
Ethylbenzene	%		101
m.p Xylene	%		91
o Xylene	%		94
Fluorobenzene (Surr.)	%		90

Sample ID: **S202300807002**

Sample Name **DSI2.TP211_0.1-0.2**

Parameter	*Units*	*PQL*	Sample Date: 27/03/2023
ESA-P-ORG(12 - 15)			
Acenaphthene	%		90
Anthracene	%		94
Fluoranthene	%		94
Naphthalene	%		94
Phenanthrene	%		96
Pyrene	%		96
p-Terphenyl-d14 (Surr.)	%		104
aldrin	%		99
endrin	%		92
hexachlorobenzene	%		82
TCMX (Surr.)	%		68
chlorpyrifos	%		104
diazinon	%		86
Aroclor 1016	%		103
2-fluorobiphenyl (Surr.)	%		82

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Sample ID:	**S202300807003**
Sample Name	**DSI2.TP211_0.1-0.2**

Parameter	*Units*	*PQL*	Sample Date: 27/03/2023
ESA-P-ORG(3,8)			
>C10-C16	%		91
>C10-C14	%		88

Sample ID:	**S202300807004**
Sample Name	**DSI2.TP211_0.1-0.2**

Parameter	*Units*	*PQL*	Sample Date: 27/03/2023
ESA-MP-01,ICP-01			
Chromium	%		123
Mercury	%		85
Nickel	%		118
Zinc	%		124

Sample ID:	**S202300815502**
Sample Name	

Parameter	*Units*	*PQL*	
ESA-MP-01,ICP-01			
Arsenic	%		112
Cadmium	%		124
Copper	%		112
Lead	%		121

Sydney Laboratory Services
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Silverwater 2128
Ph: (02) 9648-6669

Document Revision Date: 22/08/2022

ESA-F-02 COC - Chain Of Custody (External: Envirolab)

ADECONSULTINGGROUP SOLUTIONS THROUGH INNOVATION

FULL PROJECT NUMBER	A101023.0120.00
PROJECT PHASE	0.003
PROJECT TASK	L02
SAMPLES DELIVERED BY:	ADE Consulting Group 6/7 Millennium Ct, Silverwater NSW 2128
SAMPLERS:	Chris Navaratnam, Monique Hitchens
TURNAROUND (BUSINESS DAY - BD):	SAME DAY: ☐ 24 hr: 2-BD: ☐ 3-BD: ☐ 5 BD (STD): XX
SAMPLING DATE:	24.03.2023
AFTER TEST STORAGE:	ROOM TEMP: ☐ FRIDGE: ☐ FREEZER: ☐ >>4 WEEKS: ☐ OTHER: ☐
REPORT FORMAT:	HARD COPY: ☐ E-MAIL: X
CONSULTANTS SIGNATURE:	CONSULTANTS EMAIL: monique.hitchens@ade.group, chris.navaratnam@ade.group
PROJECT MANAGERS SIGNATURE:	PROJECT MANAGERS E-MAIL: andrew.hunt@ade.group, linda.lenihan@ade.group, santo.ragusa@ade.group

LABORATORY REFERENCE NO. (Lab use ONLY):			
RECEIVED BY: CMS		SIGNATURE:	
SAMPLES: CHILLED: ☑	PRESERVED: ☐	PRESERVATION METHOD: ☐ Ice	CUSTODY SEAL INTACT: ☑
MINIMAL HEADSPACE : ☐	WITHIN HOLDING TIME: ☐		
DATE: 28/3	TIME: 1100	TEMPERATURE UPON RECEIPT: 17 °C	
LIMS LOT NO.	LIMS/EXCEL SIGNATURE:	COMMENTS:	

SAMPLE DATA				CONTAINER DATA		ANALYSES REQUIRED							NOTES
LIMS Sample ID (Lab Use)	Sample ID (ADE)	MATRIX	SAMPLE DATE	TYPE & PRESERVATIVE	NO. OF SAMPLE CONTAINERS	Combination 6	Asbestos 500ml	Asbestos Bulk	PFAS Short Suite	VOCs	TRHs C10- C40	CRS On Hold	POTENTIAL HAZARDOUS CONTAMINANTS: ☐ ASBESTOS ☐ HYDROCARBONS ☐ LEAD/ARSENIC ☐ NO KNOWN CONTAMINATION ☐ OTHER:_____ LAB PLEASE *EMAIL COC RECEIPT: ☐ Sample Comments
	DSI_SR2	S	24.03.2023	G	1	X							Please use PFAS LOR of 5µg/kg

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 319829

Date Received: 28/3
Time Received: 1100
Received By: CMS
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Comments:

Container Type and Preservative: P = Unpreserved Plastic; PN = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; PNA = Sodium Hydroxide Preserved Plastic; PC = HCl preserved Plastic; VC = Vial HCl Preserved; SP = Sulfuric Preserved Plastic; VS = Vial Sodium Bisulphate Preserved; VS = Vial Sulfuric Preserved; V = Unpreserved Vial; G = Amber Glass Unpreserved; SG = Sulfuric Preserved Amber Glass; F = Formaldehyde Preserved Glass; HS = HCl preserved Speciation bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; J = Unpreserved Glass Jar; ASS = Plastic Bag for Acid Sulfate Soils; B = Unpreserved Bag.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 319629

Client Details

Client	ADE CONSULTING GROUP PTY LTD
Attention	Monique Hitchens, Chris Navaratnam
Address	Unit 6, 7 Millenium Court, Silverwater, NSW, 2128

Sample Details

Your Reference	**A101023.0120.00-0.003**
Number of Samples	1 Soil
Date samples received	28/03/2023
Date completed instructions received	28/03/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	04/04/2023
Date of Issue	04/04/2023

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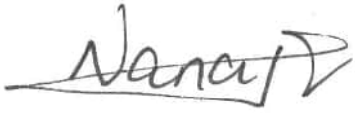
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Hannah Nguyen, Metals Supervisor
Kyle Gavrily, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		319629-1
Your Reference	UNITS	DSI-SR2
Date Sampled		24/03/2023
Type of sample		Soil
Date extracted	-	29/03/2023
Date analysed	-	29/03/2023
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	90

svTRH (C10-C40) in Soil		
Our Reference		319629-1
Your Reference	UNITS	DSI-SR2
Date Sampled		24/03/2023
Type of sample		Soil
Date extracted	-	29/03/2023
Date analysed	-	30/03/2023
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
Total +ve TRH (C10-C36)	mg/kg	<50
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	79

PAHs in Soil		
Our Reference		319629-1
Your Reference	UNITS	DSI-SR2
Date Sampled		24/03/2023
Type of sample		Soil
Date extracted	-	29/03/2023
Date analysed	-	30/03/2023
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	0.2
Benzo(a)anthracene	mg/kg	0.3
Chrysene	mg/kg	0.3
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	0.06
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	0.79
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	102

Organochlorine Pesticides in soil		
Our Reference		319629-1
Your Reference	UNITS	DSI-SR2
Date Sampled		24/03/2023
Type of sample		Soil
Date extracted	-	29/03/2023
Date analysed	-	30/03/2023
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	97

Organophosphorus Pesticides in Soil		
Our Reference		319629-1
Your Reference	UNITS	DSI-SR2
Date Sampled		24/03/2023
Type of sample		Soil
Date extracted	-	29/03/2023
Date analysed	-	30/03/2023
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Parathion	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Ethion	mg/kg	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1
Surrogate TCMX	%	97

PCBs in Soil		
Our Reference		319629-1
Your Reference	UNITS	DSI-SR2
Date Sampled		24/03/2023
Type of sample		Soil
Date extracted	-	29/03/2023
Date analysed	-	30/03/2023
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCMX	%	97

Acid Extractable metals in soil		
Our Reference		319629-1
Your Reference	UNITS	DSI-SR2
Date Sampled		24/03/2023
Type of sample		Soil
Date prepared	-	29/03/2023
Date analysed	-	29/03/2023
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	12
Copper	mg/kg	12
Lead	mg/kg	11
Mercury	mg/kg	<0.1
Nickel	mg/kg	9
Zinc	mg/kg	22

Moisture		
Our Reference		319629-1
Your Reference	UNITS	DSI-SR2
Date Sampled		24/03/2023
Type of sample		Soil
Date prepared	-	29/03/2023
Date analysed	-	30/03/2023
Moisture	%	7.6

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			29/03/2023	[NT]	[NT]	[NT]	[NT]	29/03/2023	[NT]
Date analysed	-			29/03/2023	[NT]	[NT]	[NT]	[NT]	29/03/2023	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	104	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	104	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	112	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	92	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	105	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	90	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			29/03/2023	[NT]	[NT]	[NT]	[NT]	29/03/2023	[NT]
Date analysed	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	124	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	105	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	124	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	105	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	78	[NT]	[NT]	[NT]	[NT]	83	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			29/03/2023	[NT]	[NT]	[NT]	[NT]	29/03/2023	[NT]
Date analysed	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	102	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	112	[NT]	[NT]	[NT]	[NT]	110	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			29/03/2023	[NT]	[NT]	[NT]	[NT]	29/03/2023	[NT]
Date analysed	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	69	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	70	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	99	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			29/03/2023	[NT]	[NT]	[NT]	[NT]	29/03/2023	[NT]
Date analysed	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	123	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Malathion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	99	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			29/03/2023	[NT]	[NT]	[NT]	[NT]	29/03/2023	[NT]
Date analysed	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	71	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-021	99	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			29/03/2023	[NT]	[NT]	[NT]	[NT]	29/03/2023	[NT]
Date analysed	-			29/03/2023	[NT]	[NT]	[NT]	[NT]	29/03/2023	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	93	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	95	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Document Revision Date: 22/08/2022

ESA-F-02 COC - Chain Of Custody (External: Envirolab)

ADECONSULTINGGROUP
SOLUTIONS THROUGH INNOVATION

FULL PROJECT NUMBER	A101023.0120.00
PROJECT PHASE	003
PROJECT TASK	L02
SAMPLES DELIVERED BY:	ADE Consulting Group 6/7 Millennium Ct, Silverwater NSW 2128
SAMPLERS:	Chris Navaratnam, Monique Hitchens
TURNAROUND (BUSINESS DAY - BD):	SAME DAY: ☐ 24 hr: 2-BD: ☐ 3-BD: ☐ 5 BD (STD): XX
SAMPLING DATE:	28.03.2023
AFTER TEST STORAGE:	ROOM TEMP: ☐ FRIDGE: ☐ FREEZER: ☐ >>4 WEEKS: ☐ OTHER: ☐
REPORT FORMAT:	HARD COPY: ☐ E-MAIL: X
CONSULTANTS SIGNATURE:	CONSULTANTS EMAIL: monique.hitchens@ade.group; chris.navaratnam@ade.group
PROJECT MANAGERS SIGNATURE:	PROJECT MANAGERS E-MAIL: andrew.hunt@ade.group, linda.lenihan@ade.group, santo.ragusa@ade.group

LABORATORY REFERENCE NO. (Lab use ONLY):			319756
RECEIVED BY:		SIGNATURE:	
SAMPLES:	CHILLED: ☐ PRESERVED: ☑	PRESERVATION METHOD: ☐	CUSTODY SEAL INTACT: ☑
MINIMAL HEADSPACE : ☐	WITHIN HOLDING TIME: ☐		
DATE: 29/3	TIME: 1500	TEMPERATURE UPON RECEIPT: 13 °C	
LIMS LOT NO.	LIMS/EXCEL SIGNATURE:	COMMENTS:	

SAMPLE DATA				CONTAINER DATA		ANALYSES REQUIRED								NOTES
LIMS Sample ID (Lab Use)	Sample ID (ADE)	MATRIX	SAMPLE DATE	TYPE & PRESERVATIVE	NO. OF SAMPLE CONTAINERS	Combination 6	Asbestos 500ml	Asbestos Bulk	PFAS Short Suite	on hold	PFAS on hold	Asbestos 500mL on hold		
	DSI1_SR3	soil	28.03.2023	G	1	x								Please use PFAS LOR of 5ug/kg

POTENTIAL HAZARDOUS CONTAMINANTS:

☐ ASBESTOS ☐ HYDROCARBONS
☐ LEAD/ARSENIC ☐ NO KNOWN CONTAMINATION
☐ OTHER:_____

LAB PLEASE *EMAIL COC RECEIPT: ☐

Sample Comments

Comments:

Container Type and Preservative: P = Unpreserved Plastic; PN = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; PNA = Sodium Hydroxide Preserved Plastic; PC = HCl preserved Plastic; VC = Vial HCl Preserved; SP = Sulfuric Preserved Plastic; VB = Vial Sodium Bisulphate Preserved; VS = Vial Sulfuric Preserved; V = Unpreserved Vial; G = Amber Glass Unpreserved; SG = Sulfuric Preserved Amber Glass; F = Formaldehyde Preserved Glass; HS = HCl preserved Speciation bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; J = Unpreserved Glass Jar; ASS = Plastic Bag for Acid Sulfate Soils; B = Unpreserved Bag.

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CERTIFICATE OF ANALYSIS 319756

Client Details

Client	ADE CONSULTING GROUP PTY LTD
Attention	Monique Hitchens
Address	Unit 6, 7 Millenium Court, Silverwater, NSW, 2128

Sample Details

Your Reference	**A101023.0120.00 003 L02**
Number of Samples	1 Soil
Date samples received	29/03/2023
Date completed instructions received	29/03/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	05/04/2023
Date of Issue	31/03/2023

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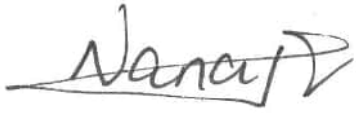
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Dragana Tomas, Senior Chemist
Hannah Nguyen, Metals Supervisor
Loren Bardwell, Development Chemist

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		319756-1
Your Reference	UNITS	DSI1_SR3
Date Sampled		28/03/2023
Type of sample		Soil
Date extracted	-	30/03/2023
Date analysed	-	31/03/2023
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	100

svTRH (C10-C40) in Soil		
Our Reference		319756-1
Your Reference	UNITS	DSI1_SR3
Date Sampled		28/03/2023
Type of sample		Soil
Date extracted	-	30/03/2023
Date analysed	-	30/03/2023
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
Total +ve TRH (C10-C36)	mg/kg	<50
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	88

PAHs in Soil		
Our Reference		319756-1
Your Reference	UNITS	DSI1_SR3
Date Sampled		28/03/2023
Type of sample		Soil
Date extracted	-	30/03/2023
Date analysed	-	31/03/2023
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	100

Organochlorine Pesticides in soil		
Our Reference		319756-1
Your Reference	UNITS	DSI1_SR3
Date Sampled		28/03/2023
Type of sample		Soil
Date extracted	-	30/03/2023
Date analysed	-	31/03/2023
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	94

Organophosphorus Pesticides in Soil		
Our Reference		319756-1
Your Reference	UNITS	DSI1_SR3
Date Sampled		28/03/2023
Type of sample		Soil
Date extracted	-	30/03/2023
Date analysed	-	31/03/2023
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Parathion	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Ethion	mg/kg	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1
Surrogate TCMX	%	94

PCBs in Soil		
Our Reference		319756-1
Your Reference	UNITS	DSI1_SR3
Date Sampled		28/03/2023
Type of sample		Soil
Date extracted	-	30/03/2023
Date analysed	-	31/03/2023
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCMX	%	94

Acid Extractable metals in soil		
Our Reference		319756-1
Your Reference	UNITS	DSI1_SR3
Date Sampled		28/03/2023
Type of sample		Soil
Date prepared	-	30/03/2023
Date analysed	-	30/03/2023
Arsenic	mg/kg	8
Cadmium	mg/kg	<0.4
Chromium	mg/kg	29
Copper	mg/kg	34
Lead	mg/kg	17
Mercury	mg/kg	<0.1
Nickel	mg/kg	22
Zinc	mg/kg	51

Moisture		
Our Reference		319756-1
Your Reference	UNITS	DSI1_SR3
Date Sampled		28/03/2023
Type of sample		Soil
Date prepared	-	30/03/2023
Date analysed	-	31/03/2023
Moisture	%	18

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			31/03/2023	[NT]	[NT]	[NT]	[NT]	31/03/2023	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	101	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	102	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	113	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	100	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	97	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	123	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	123	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	96	[NT]	[NT]	[NT]	[NT]	106	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			31/03/2023	[NT]	[NT]	[NT]	[NT]	31/03/2023	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	84	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	102	[NT]	[NT]	[NT]	[NT]	89	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			31/03/2023	[NT]	[NT]	[NT]	[NT]	31/03/2023	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	71	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	78	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	70	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	68	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	72	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	95	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			31/03/2023	[NT]	[NT]	[NT]	[NT]	31/03/2023	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	79	[NT]
Malathion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	64	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	95	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			31/03/2023	[NT]	[NT]	[NT]	[NT]	31/03/2023	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	65	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-021	95	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	120	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	115	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	120	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	125	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Sydney Laboratory Services

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

A.B.N. 52 093 452 950

Analysis report: A101023.0120.00

Laboratory LOT NO: 2301197

Date Received: 28.03.2023
Date Analysed: 30.03.2023
Report Date: 30.03.2023
Client: ADE Consulting Group
Job Location: As Received
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

*Asbestos identification as per "National Environment Protection (Assessment of site contamination) Measure, Schedule B1" and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" is not coverd by NATA scope of accreditation

ABI-P-01: Procedure for the Analysis and ID of Bulk Samples for Asbestos

Analysis performed by:

Michelle Ogilvie
Approved asbestos identifier

Results Authorised By:

Grace (Weichen) Jia
Approved Signatory

Accreditation No.14664.
Accredited for compliance with ISO/IEC 17025 - Testing.

Tests not covered by NATA are denoted with *.

General Comments:

Sydney Laboratory Services is responsible for all the information in the report, except that provided by the customer. All sampling information included in the report has been provided by the client

Sample analysed as received.
Samples are stored for minimum period of 1 month if longer time is not advised by client.
Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.01g/kg (0.001% w/w) for friable asbestos and 0.1g/kg (0.01% w/w) for bonded asbestos.
This form of analysis is outside the scope of NATA accreditation.
Bonded asbestos containing material (bonded ACM) : Bonded ACM comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin.This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
Fibrous asbestos (FA): FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
Asbestos fines (AF): AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.
Note: The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.

Accreditation No.14664.
Accredited for compliance with ISO/IEC 17025 - Testing.

Tests not covered by NATA are denoted with *.

Client Sample ID.	Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Weight (Dry Weight)	Trace Analysis Completed Y/N	Result	Comments
DSI1.TP109_0.2-0.3	2023008090	* Granulated dark soil with rocks	500 ml	650 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI1TP110_0-0.1	2023008091	* Granulated dark soil with rocks	500 ml	712 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI1TP110_0-0.1_FC3	2023008092	Grey Fibre Cement	9.4 x 9.0 x 0.5	92 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI1.TP111_0.3-0.4	2023008093	* Granulated dark soil with rocks	500 ml	757 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI1.TP113_0.2-0.3	2023008094	* Granulated dark soil with rocks	500 ml	612 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI1.TP115_0.2-0.3	2023008096	* Granulated dark soil with rocks	500 ml	830 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI1.TP119_0.1-0.3	2023008098	* Granulated dark soil with rocks	500 ml	600 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI1.TP121_0.3-0.4	2023008100	* Granulated dark soil with rocks	500 ml	633 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil

Sydney Laboratory Services

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Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

A.B.N. 52 093 452 950

Analysis report: A101023.0120.00
Laboratory LOT NO: 2301137

Date Received: 24.03.2023
Date Analysed: 27.03.2023
Report Date: 27.03.2023
Client: ADE Consulting Group
Job Location: As Received
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

*Asbestos identification as per "National Environment Protection (Assessment of site contamination) Measure, Schedule B1" and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" is not coverd by NATA scope of accreditation

ABI-P-01: Procedure for the Analysis and ID of Bulk Samples for Asbestos

Analysis performed by:

Michelle Ogilvie
Approved asbestos identifier

Results Authorised By:

Grace (Weichen) Jia
Approved Signatory

Accreditation No.14664.
Accredited for compliance with ISO/IEC 17025 - Testing.

Tests not covered by NATA are denoted with *.

General Comments:

Sydney Laboratory Services is responsible for all the information in the report, except that provided by the customer. All sampling information included in the report has been provided by the client

Sample analysed as received.
Samples are stored for minimum period of 1 month if longer time is not advised by client.
Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.01g/kg (0.001% w/w) for friable asbestos and 0.1g/kg (0.01% w/w) for bonded asbestos.
This form of analysis is outside the scope of NATA accreditation.
Bonded asbestos containing material (bonded ACM) : Bonded ACM comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin.This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
Fibrous asbestos (FA): FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
Asbestos fines (AF): AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.
Note: The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.

Client Sample ID.	Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Weight (Dry Weight)	Trace Analysis Completed Y/N	Result	Comments
DSI_TP187_0.2-0.3	2023007645	* Granulated dark soil with rocks	500 ml	533 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP181_0.2-0.3	2023007646	* Granulated dark soil with rocks	500 ml	693 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP180_0.2.FC2	2023007648	Grey Fibre Cement	4.5 x 3.8 x 0.5	19 grams	N/A	Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP179_0-0.2	2023007649	* Granulated dark soil with rocks	500 ml	670 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP175_0.2-0.3	2023007651	* Granulated dark soil with rocks	500 ml	600 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP173_0-0.2	2023007654	* Granulated dark soil with rocks	500 ml	560 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP169_0-0.2	2023007657	* Granulated dark soil with rocks	500 ml	668 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP167_0-0.2	2023007658	* Granulated dark soil with rocks	500 ml	568 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil

Client Sample ID.	Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Weight (Dry Weight)	Trace Analysis Completed Y/N	Result	Comments
DSI_TP189_0.2-0.3	2023007661	* Granulated dark soil with rocks	500 ml	563 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP195_0-0.2	2023007665	* Granulated dark soil with rocks	500 ml	582 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP191_0-0.2_FC1	2023007666	Grey Fibre Cement	5.0 x 3.9 x 0.5	16 grams	N/A	Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil

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Ph: (02) 9648-6669

A.B.N. 52 093 452 950

Analysis report: A101023.0120.00

Laboratory LOT NO: 2301164

Date Received: 27.03.2023
Date Analysed: 28.03.2023
Report Date: 28.03.2023
Client: ADE Consulting Group
Job Location: As Received
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

*Asbestos identification as per "National Environment Protection (Assessment of site contamination) Measure, Schedule B1" and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" is not coverd by NATA scope of accreditation

ABI-P-01: Procedure for the Analysis and ID of Bulk Samples for Asbestos

Analysis performed by:

Michelle Ogilvie
Approved asbestos identifier

Results Authorised By:

Grace (Weichen) Jia
Approved Signatory

Accreditation No.14664.
Accredited for compliance with ISO/IEC 17025 - Testing.

Tests not covered by NATA are denoted with *.

General Comments:

Sydney Laboratory Services is responsible for all the information in the report, except that provided by the customer. All sampling information included in the report has been provided by the client

Sample analysed as received.
Samples are stored for minimum period of 1 month if longer time is not advised by client.
Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.01g/kg (0.001% w/w) for friable asbestos and 0.1g/kg (0.01% w/w) for bonded asbestos.
This form of analysis is outside the scope of NATA accreditation.
Bonded asbestos containing material (bonded ACM) : Bonded ACM comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin.This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
Fibrous asbestos (FA): FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
Asbestos fines (AF): AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.
Note: The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.

Accreditation No.14664.
Accredited for compliance with ISO/IEC 17025 - Testing.

Tests not covered by NATA are denoted with *.

Client Sample ID.	Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Weight (Dry Weight)	Trace Analysis Completed Y/N	Result	Comments
DSI_TP125_0-0.2	2023007883	* Granulated dark soil with rocks	500 ml	373 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP129_0.1-0.2	2023007888	* Granulated dark soil with rocks	500 ml	549 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP133_0.1-0.2	2023007890	* Granulated dark soil with rocks	500 ml	449 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP137_0-0.1	2023007894	* Granulated dark soil with rocks	500 ml	489 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP141_0.2-0.3	2023007896	* Granulated dark soil with rocks	500 ml	574 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP145_0-0.1	2023007899	* Granulated dark soil with rocks	500 ml	417 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil

Client Sample ID.	Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Weight (Dry Weight)	Trace Analysis Completed Y/N	Result	Comments
DSI_TP149_0.1-0.2	2023007901	* Granulated dark soil with rocks	500 ml	350 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP137_FC3_0-0.1	2023007905	Grey Fibre Cement	6.0 x 2.2 x 0.5	19 grams	N/A	Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil

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Silverwater 2128
Ph: (02) 9648-6669

A.B.N. 52 093 452 950

Analysis report: A101023.0120.00
Laboratory LOT NO: 2301165

Date Received: 27.03.2023
Date Analysed: 28.03.2023
Report Date: 28.03.2023
Client: ADE Consulting Group
Job Location: As Received
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

*Asbestos identification as per "National Environment Protection (Assessment of site contamination) Measure, Schedule B1" and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" is not coverd by NATA scope of accreditation

Analysis performed by:

Michelle Ogilvie
Approved asbestos identifier

Results Authorised By:

Grace (Weichen) Jia
Approved Signatory

General Comments:

Sydney Laboratory Services is responsible for all the information in the report, except that provided by the customer. All sampling information included in the report has been provided by the client

Sample analysed as received.
Samples are stored for minimum period of 1 month if longer time is not advised by client.
Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.01g/kg (0.001% w/w) for friable asbestos and 0.1g/kg (0.01% w/w) for bonded asbestos.
This form of analysis is outside the scope of NATA accreditation.
Bonded asbestos containing material (bonded ACM) : Bonded ACM comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin.This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
Fibrous asbestos (FA): FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
Asbestos fines (AF): AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.
Note: The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.

Client Sample ID.	Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Weight (Dry Weight)	Trace Analysis Completed Y/N	Result	Comments
DSI_TP153_0.1-0.2	2023007907	Granulated dark soil with rocks	500 ml	331 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP157_0.1-0.2	2023007909	Granulated dark soil with rocks	500 ml	656 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP161_0.1-0.2	2023007913	Granulated dark soil with rocks	500 ml	677 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI_TP165_0.3-0.4	2023007915	Granulated dark soil with rocks	500 ml	740 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil

Appendix VII – Equipment Calibration Certificates

AES
sensing safety

Calibration and Service Report – PID

Company:	ADE Consulting Group (NSW) P	**Manufacturer:**	RAE	**Serial #:**	595-002269
Contact:	Michelle Ridley	**Instrument:**	MINIRAE LITE SN: 595-002269	**Asset #:**	PID 4
Address:	Unit 6 7 Millennium Court Silverwater NSW 2128	**Model:**	MINIRAE LITE	**Part #:**	059-A126-000
		Configuration:	VOC 10.6EV	**Sold:**	04.05.2017
		Wireless:	-	**Last Cal:**	21.07.2022
Phone:	1300796922	**Network ID:**	-	**Job #:**	146263
Fax:		**Unit ID:**	-	**Cal Spec:**	
Email:	michelle.ridley@ade.group	**Details:**		**Order #:**	TBA - PID1/PID4

Calibration Certificate

Sensor	Type	Serial No.	Span Gas	Concentration	Traceability Lot #	CF	Reading	
							Zero	Span
Oxygen								
LEL								
PID	050-0000-004, 10.6EV 1/2 INCH LAMP	S023060018U3/1062R11 6509	Isobutylene	100ppm	WO279983-1		0	100.0
Battery	059-3053-000, MINIRAE LITE RECHARGEABLE	159U3W0383						
Toxic 1								
Toxic 2								
Toxic 3								
Toxic 4								
Toxic 5								
Toxic 6								

Calibrated/Repaired by: JERRY JI Date: 23.01.2023 Next Due: 23.07.2023

Calibration and Service Report – PID

Company:	ADE Consulting Group (NSW) F	**Manufacturer:**	RAE	**Serial #:**	595-002269
Contact:	Michelle Ridley	**Instrument:**	MINIRAE LITE SN: 595-002269	**Asset #:**	PID 4
Address:	Unit 6 7 Millennium Court Silverwater NSW 2128	**Model:**	MINIRAE LITE	**Part #:**	059-A126-000
		Configuration:	VOC 10.6EV	**Sold:**	04.05.2017
		Wireless:	-	**Last Cal:**	21.07.2022
Phone:	1300796922	**Network ID:**	-	**Job #:**	146263
Fax:		**Unit ID:**	-	**Cal Spec:**	
Email:	michelle.ridley@ade.group	**Details:**		**Order #:**	TBA - PID1/PID4

Item	Test	Pass/Fail	Comments	Serial Number
Battery	NiCd, NiMH, Dry cell, LiIon	P		
Charger	Power Supply	P		
	Cradle, Travel Charger	P		
Pump	Flow	x	Cleaned pump, >450ml/min	
Filter	Filter, fitting, etc	x	Replaced	
Alarms	Audible, visual, vibration	P		
Display	Operation	P		
Switches	Operation	P		
PCB	Operation	P		
Connectors	Condition	P		
Firmware	Version	P	V2.22A	
Datalogger	Operation	P		
Monitor Housing	Condition	P		
Case	Condition / Type	-		
Sensors				
PID	Lamp	P	Cleaned	
PID	Sensor	P	Cleaned (ultrasonic bath)	
THP	Sensor	P	Cleaned	

Engineer's Report

Cleaned lamp, lamp housing and sensor detector (ultrasonic bath. Unit was unscrewed from sensor cover, sensor detector exposed and very dirty)
Cleaned THP sensor, checked moisture sensitivity
Cleaned pump assembly, checked flowrate and stall values
Checked unit settings and PC configuration
Unit serviced and calibrated.

Appendix VIII – Dial Before You Dig (DYBD)

Job No 33723003

Phone: 1100
www.byda.com.au

Caller Details

Contact:	Andrew Hunt	**Caller Id:**	3138116	**Phone:**	0405 685 962
Company:	14 617 358 808				
Address:	Unit 6 7 Millennium Court Silverwater NSW 2128	**Email:**	andrew.hunt@ade.group		

Dig Site and Enquiry Details

WARNING: The map below only displays the location of the proposed dig site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.

User Reference: Mamre and Abbotts Road Rozelle

Working on Behalf of: Private

Enquiry Date:	**Start Date:**	**End Date:**
01/03/2023	06/03/2023	27/03/2023

Address:

1016-1028 Mamre Road
Kemps Creek NSW 2178

Job Purpose:	**Onsite Activities:**
Excavation	Mechanical Excavation
Location of Workplace:	**Location in Road:**
Road Reserve	Road, Nature Strip

- Check that the location of the dig site is correct. If not you must submit a new enquiry.
- Should the scope of works change, or plan validity dates expire, you must submit a new enquiry.
- Do NOT dig without plans. Safe excavation is your responsibility. If you do not understand the plans or how to proceed safely, please contact the relevant asset owners.

Notes/Description of Works:

Not supplied

Your Responsibilities and Duty of Care

- The lodgement of an enquiry does not authorise the project to commence. You must obtain all necessary information from any and all likely impacted asset owners prior to excavation.
- If plans are not received within 2 working days, contact the asset owners directly & quote their Sequence No.
- ALWAYS perform an onsite inspection for the presence of assets. Should you require an onsite location, contact the asset owners directly. Please remember, plans do not detail the exact location of assets.
- Pothole to establish the exact location of all underground assets using a hand shovel, before using heavy machinery.
- Ensure you adhere to any State legislative requirements regarding Duty of Care and safe digging requirements.
- If you damage an underground asset you MUST advise the asset owner immediately.
- By using this service, you agree to Privacy Policy and the terms and disclaimers set out at **www.byda.com.au**
- **For more information on safe excavation practices, visit www.byda.com.au**

Asset Owner Details

The assets owners listed below have been requested to contact you with information about their asset locations within 2 working days.
Additional time should be allowed for information issued by post. It is **your responsibility** to identify the presence of any underground assets in and around your proposed dig site. Please be aware, that not all asset owners are registered with the Before You Dig service, so it is **your responsibility** to identify and contact any asset owners not listed here directly.
** Asset owners highlighted by asterisks ** require that you visit their offices to collect plans.
# Asset owners highlighted with a hash # require that you call them to discuss your enquiry or to obtain plans.

Seq. No.	Authority Name	Phone	Status
221801111	Endeavour Energy	(02) 9853 4161	NOTIFIED
221801109	NBN Co NswAct	1800 687 626	NOTIFIED
221801108	Penrith City Council	(02) 4732 8010	NOTIFIED
221801110	Sydney Water	13 20 92	NOTIFIED
221801112	Telstra NSW Central	1800 653 935	NOTIFIED

END OF UTILITIES LIST

If further clarification is required, please contact:
Endeavour Energy
Phone: (02) 9853 4161 (8:00am-4:30pm Mon-Fri)
Emergency Phone Number: 131 003

BEFORE COMMENCING EXCAVATION YOU MUST READ AND UNDERSTAND ALL INFORMATION PROVIDED IN THE BYDA RESPONSE AND LISTED BELOW

BACKGROUND

Endeavour Energy is able to make available plans of its underground assets to persons who intend to undertake excavation works in Endeavour Energy's distribution area. Any plans provided to you are made available subject to the provisions set out below, in the provided plans, and in the Endeavour Energy BYDA response Cover Letter.

We have set out below important information regarding the recommended procedures that should be followed when using this service and also the extent of our responsibility in respect of any plans provided. It is very important that you read and understand all the information and disclaimers provided below before excavating.

Information Provided by Endeavour Energy:

- Any plans provided pursuant to this service are intended to show the approximate location of underground assets relative to road boundaries, property fences and other structures at the time of installation.
- Underground assets may be congested at the approach to bridges and other structures. Typical asset depths and alignment may vary substantially, rising and falling sharply and at much shallower depths than elsewhere as they are channeled into shared allocated spaces on bridges and other structures. Additional precautions and underground asset location methods will be required in proximity to bridges and other structures.
- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

DISCLAIMER

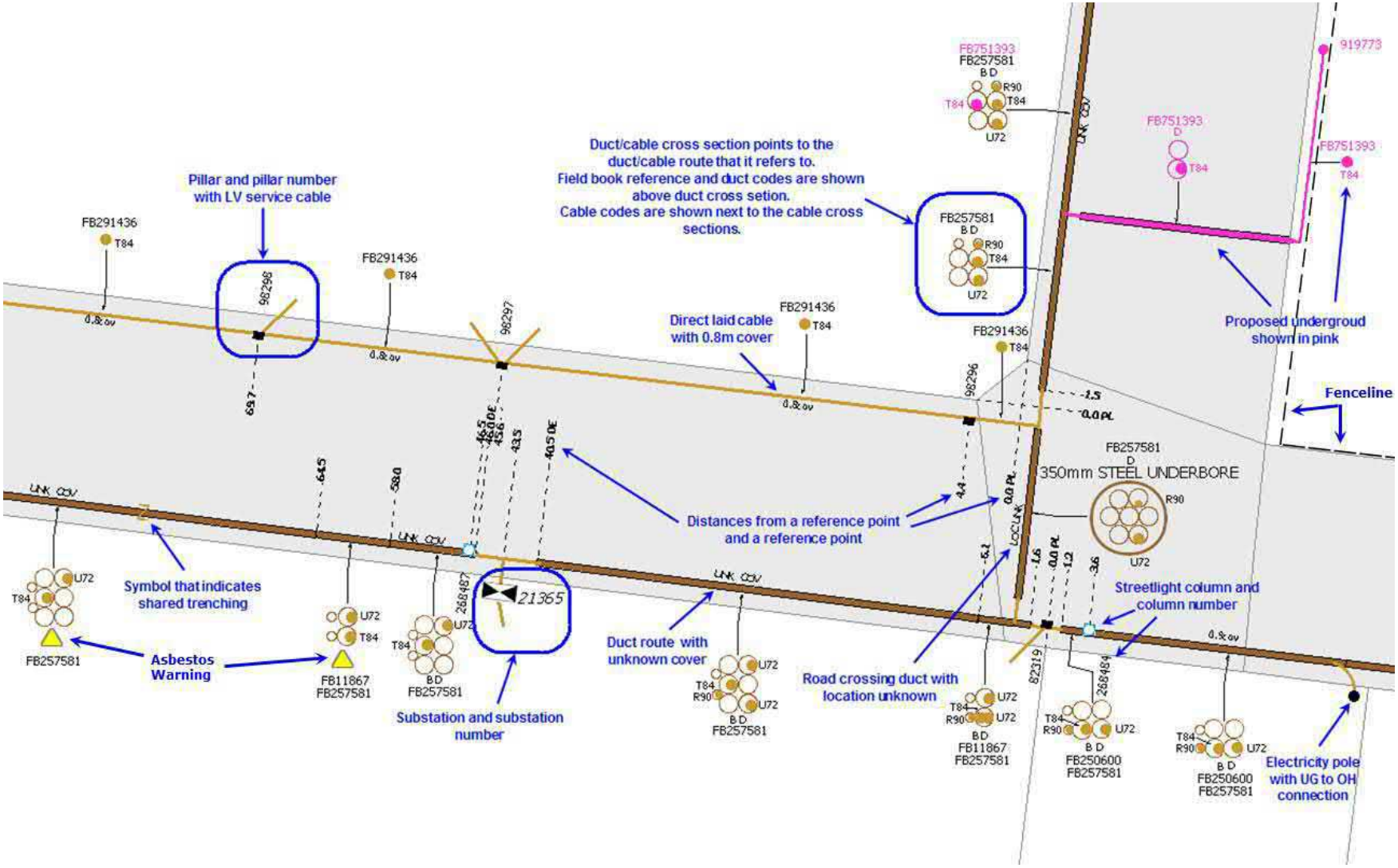
Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in the plans is as accurate as possible it will accept no liability for inaccuracies in the information shown on such plans.

CUSTOMER REQUESTS AND RESPONSIBILITIES

- Endeavour Energy expects to be able to provide relevant plans within 48 hours after a request is made.
- If the enquiry falls within the Transmission Mains area, additional notification requirements shall be complied with as per the instructions in the response Cover Letter.
- Endeavour Energy retains copyright over all plans and details provided in response to a customer's request.
- Persons excavating are expected to exercise all due care in the vicinity where underground assets are indicated and will be held responsible for any damage to any underground assets (including any Endeavour Energy property) or any other loss caused (including consequential losses) as a result of such excavations.
- All underground assets should be visually located by soft digging (pot holing) or hand digging.
- A person who undertakes excavation work is subject to duties and responsibilities under the *Work Health and Safety Act 2011* and *Work Health and Safety Regulation 2011*. Please refer to the Work Cover NSW "*Work near underground assets: Guide*" and "*Excavation work: Code of practice*" which contain practical advice for working near underground utility services.
- Any damage to Endeavour Energy's assets must be immediately reported on **131 003**.
- In all cases of electric shock or suspected electric shock the victim shall immediately be transported to hospital or medical centre for treatment.
- If conduit material cannot be identified, it should be assumed to contain asbestos material.
- Endeavour Energy plans are frequently updated to record changes to underground assets. All plans are valid for **20** working days from the date of issue.

If further clarification is required, please contact:
Endeavour Energy
Phone: (02) 9853 4161 (8:00am-4:30pm Mon-Fri)
Emergency Phone Number: 131 003

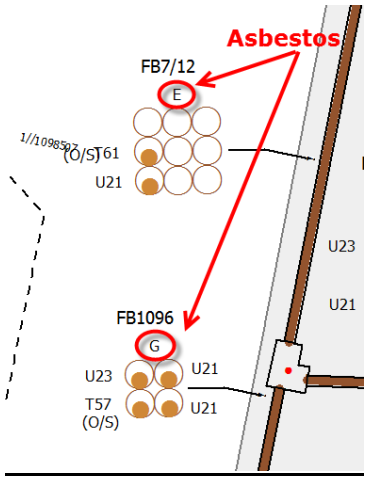
EXAMPLE OF HOW TO READ ENDEAVOUR ENERGY PLANS



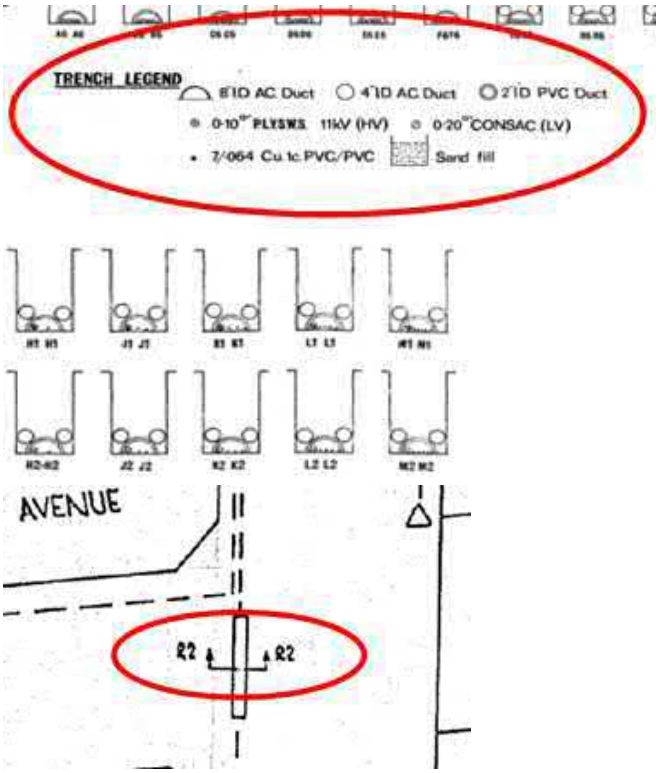
If further clarification is required, please contact:
Endeavour Energy
Phone: (02) 9853 4161 (8:00am-4:30pm Mon-Fri)
Emergency Phone Number: 131 003

IDENTIFYING ASBESTOS DUCTS

1. Duct codes **E, F** and **G** identify Fibro Conduits

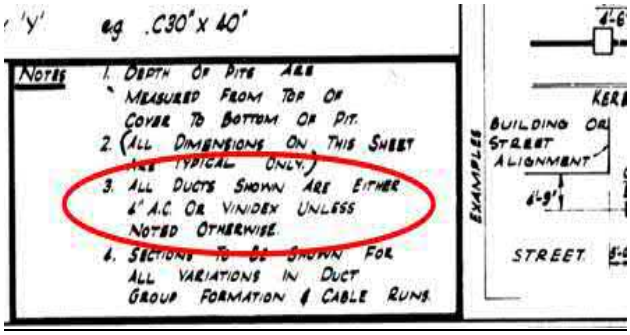


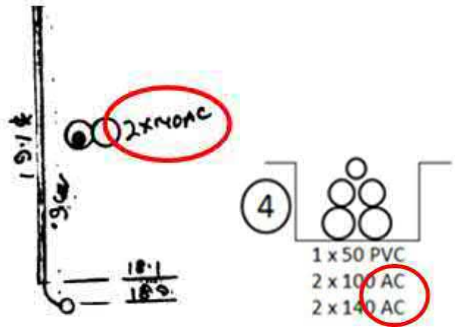
2. The duct codes **G,H,J,K,L,M Q,R,S,T,U,V,W & X** under each configuration are used on old Blue Mountains drawings to identify Asbestos



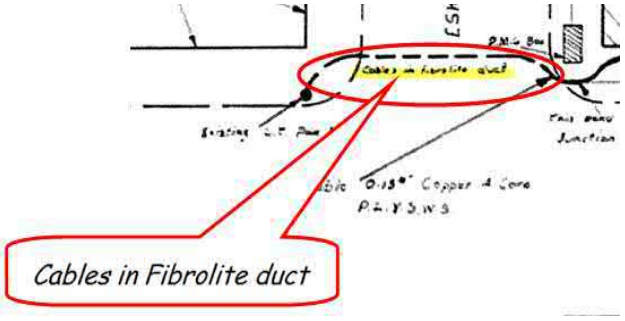
If underground details have not been captured and drawings are used, the method for identifying asbestos ducts and standards are different for the different utilities that amalgamated with Endeavour Energy. Using Reticulation Drawings, there are numerous ways to determine if a duct route has asbestos ducts, refer to following examples:

3. **AC** (Asbestos Cement) acronym

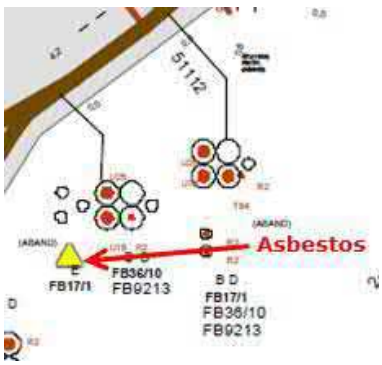




4. **Fibrolite** (asbestos) ducts



5. Yellow **triangle** identifies Fibro Conduits



If further clarification is required, please contact:
Endeavour Energy
Phone: (02) 9853 4161 (8:00am-4:30pm Mon-Fri)
Emergency Phone Number: 131 003

STANDARD UNDERGROUND SYMBOLS / LABELS

NOTE: *If symbology has not been provided on the plan use symbols as shown below.*

SYMBOLS & ACRONYMS

or — Street light column

Padmount substation

or — Overground pillar (O.G.Box)

Underground pit

Duct run

Cable run


Typical duct section


Typical underbore section

Blocked duct

Cable section

Asbestos warning

STJ, PBJ, TTJ

STJ Straight through joint

PBJ Parallel branch joint

TTJ Transition through joint

Underground to overhead pole

SL Streetlight conductor

SC Service cable

SE Cable sealed end

SF Service Feeder

OS Out of Service

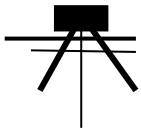
O.A.M. Over awning main

U.A.M. Under awning main

N.I.S. Not in service

Fence/dimensioning

Shared trenching


Service point of attachment

DUCT CODE LABLES

B = 50 mm PVC

D = 125mm PVC

E = 100mm Fibro Conduit (Asbestos)

F = 140mm Fibro Conduit (Asbestos)

G = 150mm Fibro Conduit (Asbestos)

DEPTH & LOCATION LABELS

0.5- 0.7 COV = 0.5m – 0.7m

0.9 COV = 0.9m Depth

UNK COV = Depth Unknown

LOC UNK = Location Unknown

0.9 PL = Located 0.9m from Property Line

ROADS ACT APPLICATION: ROAD RESERVE OPENING FY2022-23

AN APPLICATION MADE UNDER SECTION 138 OF THE ROADS ACT 1993

This form is to be filled out for road openings, including nature strips, on local Council roads, Regional roads and some road verges on State Roads in the Penrith LGA. Please note that temporary occupation of a road reserve for the purpose of excavation is authorised under the Road Opening Permit. **Completed form to be sent to** council@penrith.city

SECTION A – APPLICANT DETAILS

I am the: ☐ Property Owner ☐ Contractor ☐ Developer

First name

Surname

Mobile number

Email address

Company Address

SECTION B – CONTRACTOR DETAILS

Company

Contractor Licence No. (Plumbing, Drainage, etc.)

Mobile number

Email address

SECTION C – WORK DETAILS

Project/Development Name (if applicable)

DA or CDP No. (if applicable)

Proposed start date

Proposed finish date

Before You Dig Australia (BYDA) Job No.

This Road Reserve Opening application is for works relating to:

☐ Electricity ☐ Water Mains ☐ Sewer Mains ☐ Stormwater ☐ Gas
☐ Telecommunications ☐ Investigations ☐ New Infrastructure ☐ Sydney Metro Works

Works location

☐ Penrith CBD ☐ St Marys CBD ☐ Residential ☐ Rural ☐ Industrial ☐ Commercial

Works are occurring on these streets / address

Suburb

Works are expected to impact the following Council road reserve assets:

☐ Road ☐ Kerb & Gutter ☐ Stormwater Pits ☐ Footpaths ☐ Nature Strip
☐ Trees ☐ Other:

The proposed works meet the below criteria

☐ Within 100m from any signalised intersection, ROL from TMC has been obtained
☐ Within 50m from any State or Regional road, ROL from TMC has been obtained
☐ Works are only on local Council roads, TMC ROL not applicable

PENRITH CITY COUNCIL

SECTION D – ROAD OPENING FEES

If this Road Opening Application is related to a DA or CDC no additional bonds are required as these are now captured as part of the Infrastructure Restoration Bond (IRB).
Council assessment required prior to payment of fees and bonds.

Work Type	Permit Fees (non-refundable)	Restoration Bond / Fee
○ **Maintenance of Private Stormwater** Repair or replacement of existing private stormwater outlet No. of outlets : ☐	Road Opening Fee $165	$300 Restoration Bond per outlet *(Galvanised full kerb height steel adaptor incl. related minor K&G works only)*
○ **Non-DA/CDC Minor Works** Installation of utility and/ or new private stormwater	S138 Admin Fee $ 250 Road Opening Fee $ 165	○ $1,000 Minor Works Bond OR ○ I will request Council to quote for restoration fees once works are completed
○ **Non-DA/CDC Major Works** Projects with the potential to damage an area greater than 30m² of pavements / footpaths	S138 Admin Fee $ 250 Road Opening Fee $ 165	○ $10,000 Major Works Bond OR ○ I will request Council to quote for restoration fees once works are completed
○ **DA or CDC Consent Condition** S138 Roads Act Approval for a Road Opening Permit under a DA or CDC.	S138 Admin Fee $ 250 Road Opening Fee $ 165	An IRB should have been lodged with Penrith Council as part of a DA condition, or under 157 of the Environmental Planning & Assessment Reg 2021 for CDCs. IRB Receipt No.

Failure to lodge a Section 138 Roads Act Application for Road Opening will incur an additional $250 fee. Tick if applicable: ☐

Bonds are used to ensure the quality of restorations. ALL BONDS ARE REFUNDABLE. Council shall give the applicant the opportunity to rectify damaged or non-compliant works in accordance with Council's Restoration Specification prior to any utilization of bonds. Concrete restoration works shall require booking a pre-pour inspection with an Asset Officer on 02 4732 8010 at least 24hrs in advance. Where the applicant has failed to comply with the Road Opening conditions, Council shall utilise the bond monies to conduct the necessary restoration works. It is highly recommended that a joint inspection be conducted with an Asset Officer upon completion of works to go through requirements to satisfy Council prior to restoration.

SECTION E – OCCUPANCY TYPE

Occupancy request type

- ☐ Full road closure
- ☐ Partial lane(s) closure
- ☐ Contraflow traffic
- ☐ Occupy nature strip

Operating Hours from ☐ AM ○ PM

Operating Hours to ☐ AM ○ PM

Note:
Long-term full road closures may need to be endorsed by the Local Traffic Committee who meets monthly. Assessment times may be extended.

SECTION F – COUNCIL FEES SUMMARY

Road Opening Permit Fees	$
Restoration Bond	$
Total Fees Payable	$ 0

PENRITH CITY COUNCIL

SECTION G – APPLICATION ATTACHMENTS

The following has been provided as attachments to form part of this application:

Mandatory Documents

- ☐ Highlighted engineering plan or aerial map indicating ALL the location(s) of proposed excavation(s) and trenching alignments
- ☐ Certificate of currency of Public Liability Insurance of no less than a value of $20 million

Traffic Management (as required)

- ☐ A Traffic Guidance Scheme(s) (TGS) showing proposed traffic control set up as required
- ☐ A Traffic Management Plan (TMP) where pedestrian or traffic is significantly impacted due to the works as required
- ☐ A copy of ROLs from TMC for works <50m State / Regional Roads or <100m to traffic signals as required
- ☐ Pedestrian Management Plan for significant impacts to pedestrian movement i.e. CBDs, as required

Utility Documents (as required)

- ☐ Sydney Water Tap-in approval, or other utility approval documentation

Dilapidation Survey

- ☐ Not Applicable, the proposed works are short-term works; or
- ☐ Dilapidation survey / prior damages report attached for long term occupancies

SECTION H – DECLARATION AND SIGNATURE

Download the application prior to signing digitally, if filling it out from an Internet browser

- ☐ I confirm that the information provided in this application is correct and I will advise Council immediately of any change.
- ☐ I have read and acknowledged the attached application conditions.
- ☐ I have read and acknowledged that restorations shall be conducted to Council's Restoration Specification.
- ☐ I confirm that as the owner of the permit I take full responsibility for the maintenance and upkeep of the area impacted by the works carried out under this permit until I have notified Council about job completion and have had all works accepted by Council.
- ☐ Should I fail to appropriately conduct the restorations in a timely manner to Council's satisfaction, I give right to Penrith Council to utilise any bond monies to conduct the necessary repairs of any damaged or non-compliant works related to this Road Opening. Any outstanding additional costs resultant of Council's restoration to the damaged or non-compliant works shall be reimbursed to Council by theapplicant.

Applicant Signature

Date

PAYMENT METHOD

See Council's adopted fees and charges at penrith.city
All fees subject to change.

Application fees can be paid by cash, cheque or credit card once the application has been assessed and confirmed for payment by Penrith Council.

- cash, cheque or credit card payments can be paid in person
- cheque or credit card payments are accepted by post
- only credit card payments are accepted by email

OFFICE USE ONLY

Receipt number	Receipt date	Total fee $

Approval number	Approval date	Approved by

PENRITH CITY COUNCIL

ROAD RESERVE OPENING PERMIT CONDITIONS

1. GENERAL

1.1. Applications can take up to ten (10) business days for an assessment and determination response.

1.2. Works cannot start until the applicant has received approval from Council's City Assets Department for this Section 138 Roads Act Application.

1.3. The road reserve shall be described as the Council owned road corridor from one property boundary to the opposite property boundary on a local and/or regional road and includes nature strips, driveways, footpaths, kerbs, gutters, and the road pavement.

1.4. Other Roads Act Approvals may be required, please refer to Council's Roads Act Application page.

1.5. A copy of Council's written approval is to be kept on site at all times, and must be presented to Council staff, or authorities of other agencies on request.

1.6. Inspections requested by the applicant that Council deems excessive shall incur an Additional Inspection fee(s). Generally maximum of two (2) site inspections is included in the approval.

1.7. Failure to comply with the conditions on this application may result in the immediate cancellation of approval.

1.8. All site workers must obey any reasonable direction from the Police, Council Rangers & Compliance, Regulatory Officer and/or any Emergency Services.

1.9. Any request for expediting the assessment of an application shall incur an additional $250 expediting fee, and will be subject to Council review and other outside factors which may not result in an approval.

2. VALIDITY

2.1. The approval period for this type of Roads Act approval shall be the proposed start and end dates – except for Road Opening Permits which shall have a permit validity period of twelve (12) months from the date of approval.

2.2. Should the works be postponed due to inclement weather or other unforeseen circumstances, the applicant may re-apply by email using the Council supplied reference number. No additional fees will be payable if the advice is received prior to the start date and there are no other changes to the original application.

2.3. Subject to the Clause 2.2, any proposed variations or extension of approval are subject to payment of further Council fees and charges. The latest fees & charges shall be applicable at the time of notification. Previous financial year rates shall not be used.

3. ROAD RESERVE OPENINGS

3.1. The applicant is responsible for conducting all due diligence prior to opening the road reserve such as Dial Before You Dig inquiries and positive identification of services.

3.2. Additional connections to Council stormwater pipes, culverts, channels, pits, watercourses, and/or the kerb & gutter NOT indicated on this application shall require the lodgment of an additional Road Opening application.

3.3. All works in Town Centres, Shopping Centres and CBD areas may require special approval and at least seven (7) days notification and may be subject to additional special Council conditions.

3.4. Pit connections shall be cut flush and rendered with non-shrink grout/concrete.

3.5. Additional excavation works NOT indicated on this application shall require the lodgment of an additional Road Opening application.

3.6. Openings to the nature strip and verges of State and Regional Roads shall require Council's Roads Act approval.

3.7. The applicant shall organize with Council's Asset Department a defect inspection upon completion of works to scope out restoration requirements. Refer to Restorations Conditions section.

4. ROAD RESERVE OCCUPANCIES AND CLOSURES

4.1. Thoroughfare for emergency vehicles must be provided at all times. If this cannot be achieved, the Applicant must advise emergency services (namely Police, Fire Brigade, and Ambulance) of the proposed road occupancy or closure.

4.2. Traffic Guidance Schemes (TGS) or Traffic Control Plans (TCP) must be developed by a qualified and competent person, and must comply with the requirements of any relevant signage specification and legislation.

4.3. Traffic Controllers must be accredited and adequately qualified as per SafeWork NSW requirements.

4.4. Council's Roads Act approval will be required for:
   i. Occupancies or closures on Local Roads

4.5. Council's Roads Act approval & Traffic Management Centre's (TMC) ROL will be required for:
   i. Works requiring occupancies or closures within 100m of any signalized intersection
   ii. Works requiring occupancies or closures on Regional Roads
   iii. Works requiring occupancies or closures within 50m of State Roads

4.6. Where major traffic management works are required (i.e. full road closures, works longer than 7 days or as directed by Council) the following are also required:
   i. A Traffic Management Plan (TMP),
   ii. Public notification and advertisement,
   iii. Report to Council's Local Traffic Committee (LTC). The LTC meets on a monthly basis and this requirement may extend assessment timeframes.
   iv. Letterbox drops by the Applicant to the affected properties, occupants, and building management

4.7. Due to the discounted rate, the weekly fee cannot be divided into days and refund requested for unused days. Full unused weekly periods only.

5. INSPECTIONS

5.1. Any Council inspections relating to a Section 138 Roads Act Approval shall be made by contacting the Asset Management Department via phone on 02 4732 7777 at the latest before 12pm one business day prior to the requested inspection date.

5.2. Sufficient time shall be allowed between the inspection and the proposed concrete pour date for any required rectifications to be made.

6. RESTORATIONS

6.1. The applicant is responsible for the restoration of any damage to Council infrastructure assets on the road reserve during the works.

6.2. Upon completion of works, restoration of any incidental and accidental damage caused by the works to Council infrastructure assets on the road reserve shall be permanently or temporarily restored.

6.3. The applicant is responsible for maintaining the temporary restorations until either:
   i. Permanent restorations are completed by the applicant to Council specifications and satisfaction, inclusive of Council concrete pre-pour inspections; or
   ii. Council has been notified that the opening has been backfilled and a temporary acceptable surface finish installed i.e. hotmix asphalt. The final scoping inspection shall be conducted by a Council Officer to confirm final restoration costs to invoice to the applicant.

6.4. Restoration works shall be conducted to Council's latest Road Reserve Restoration Specifications and shall require initial & final inspections by Asset Officers to ascertain restoration limits, location of sawcuts, joints, dowels etc.

6.5. Should the applicant opt for Council to permanently restore the damage, the applicant shall fully pay the restoration fees as per Council's latest Fees & Charges as assessed by Council Asset Officers.

6.6. Where the applicant has failed to make safe hazardous defects related caused by the works as instructed by Council, the applicant is responsible for any costs incurred by Council for the make safe.

6.7. At any stage Council maintains the right to conduct the required restoration within the road reserve at no cost to Council should the applicant fail to conduct adequate restoration works.

7. BONDS

7.1. A development under a Development Application (DA) may impose consent conditions that may require the lodgment of an Infrastructure Restoration Bond (IRB).

7.2. Any development under a Complying Development Certificate (CDC) must comply with Clause 157 of the Environmental Planning and Assessment Regulation 2021 and lodge an IRB as required.

7.3. The bonds shall be used to permanently restore any damaged Council road reserve assets after the completion of a development, or any hazardous defects during the development not well-maintained by the applicant.

7.4. The applicant is responsible for the retrieval of any outstanding bonds they may have with Council under the Limitations Act 1969.

7.5. Where Council has attempted to contact the applicant and/or notified the applicant to enact the required restorations of damaged Council assets in the road reserve, and no response or action has been provided within a reasonable timeframe as per Section 108 of the Roads Act 1993, the applicant gives right to Council to utilise the bond to conduct the necessary repairs of Council infrastructure whereby it has been directly damaged by the works.

7.6. Council shall forward any outstanding bonds that have lapsed 6 years to the relevant State department as per the Unclaimed Monies Act 1995.

8. UNAUTHORISED WORKS

8.1. Where works have been conducted without the appropriate Roads Act Approval additional penalty fees shall apply.

8.2. If works were conducted on the basis of an emergency, the penalty fees shall be waived if the prescribed Council fees are paid within two (2) working days. Evidence must be provided to the Assets Administration Team to support emergency nature of works.

9. FEES AND CHARGES

9.1. Fees can be waived for Council-funded projects or Utility maintenance/upgrade related projects. This clause does not apply for developer-related utility works; fees shall apply in this case.

9.2. The administration fee is non-refundable and shall cover the initial administration of the application and any other assessments by Council's Assets department.

10. PUBLIC LIABILITY

10.1. The applicant shall indemnify Council if a member of the public suffers injury or public asset/private property has been damaged due to the works being carried out.

10.2. The currency of an appropriate public liability insurance of no less than $20 million must be maintained.

11. COMMUNITY AND SAFETY

11.1. The applicant is responsible for carrying out community notifications as required to all affected residents, occupants and building management affected by the works.

11.2. Any temporary structures on the road reserve that help facilitate the works shall be maintained in a clean, tidy and safe condition at all times.

11.3. Safe pedestrian access must be provided at all times. Any temporary traffic and pedestrian controls must comply with relevant standards and specifications, and must have a Roads Act Approval for road reserve occupation or closure.

12. WHS, ENVIRONMENT & NOISE

12.1. The Applicant is responsible for the health and safety of all individuals entering, and for the public accessing around the work site.

12.2. The Applicant is responsible for all environmental controls and shall maintain them in good condition during the entire approval period until the disturbed areas are restored and stabilized.

12.3. The applicant is responsible for stopping works immediately if the presence of asbestos or other hazardous materials is identified on the road reserve. The applicant must isolate the affected area and place warning signs to ensure the safety of workers and members of the public. The applicant must also advise Council of the find. The applicant shall organize and cover the cost for the safe removal by a licensed contractor and the clearance certificate to be provided to Council.

12.4. No trees are to be removed without Council permission.

12.5. All street trees must have an appropriate protection zone from any edge of any construction.

12.6. The use of equipment or activities to be conducted shall not result in any offensive noise as defined by the Noise Control Act.

12.7. Penalties may apply for breaching any safety, environment or noise requirements.

CONTACT US

Penrith City Council
601 High Street
PENRITH NSW 2750

PO Box 60
601 High Street
PENRITH NSW 2751

PHONE: (02) 4732 7777
FAX: (02) 4732 7958
EMAIL: council@penrith.city
WEB: penrith.city

Working near nbn™ cables

nbn has partnered with Dial Before You Dig to give you a single point of contact to get information about **nbn** underground services owned by **nbn** and other utility/service providers in your area including communications, electricity, gas and other services. Contact with underground power cables and gas services can result in serious injury to the worker, and damage and costly repairs. You must familiarise yourself with all of the Referral Conditions (meaning the referral conditions referred to in the DBYD Notice provided by **nbn**).

Practice safe work habits

Once the DBYD plans are reviewed, the Five P's of Excavation should be adopted in conjunction with your safe work practices (which must be compliant with the relevant state Electrical Safety Act and Safe Work Australia "Excavation Work Code of Practice", as a minimum) to ensure the risk of any contact with underground **nbn** assets are minimised.

Plan: Plan your job by ensuring the plans received are current and apply to the work to be performed. Also check for any visual cues that may indicate the presence of services not covered in the DBYD plans.

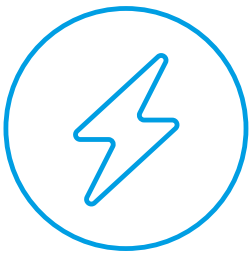
Prepare: Prepare for your job by engaging a DBYD Certified Plant Locator to help interpret plans and identify on-site assets. Contact **nbn** should you require further assistance.

Pothole: Non-destructive potholing (i.e. hand digging or hydro excavation) should be used to positively locate **nbn** underground assets with minimal risk of contact and service damage.

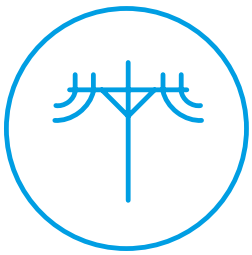
Protect: Protecting and supporting the exposed **nbn** underground asset is the responsibility of the worker. Exclusion zones for **nbn** assets are clearly stated in the plan and appropriate controls must be implemented to ensure that encroachment into the exclusion zone by machinery or activities with the potential to damage the asset is prevented.

Proceed: Proceed only when the appropriate planning, preparation, potholing and protective measures are in place.

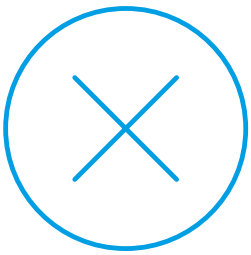
Working near nbn™ cables



Identify all electrical hazards, assess the risks and establish control measures.



When using excavators and other machinery, also check the location of overhead power lines.



Workers and equipment must maintain safety exclusion zones around power lines.

Once all work is completed, the excavation should be re-instated with the same type of excavated material unless specified by **nbn**. Please note:

- Construction Partners of **nbn** may require additional controls to be in place when performing excavation activities.
- The information contained within this pamphlet must be used in conjunction with other material supplied as part of this request for information to adequately control the risk of potential asset damage.

Contact

All nbn™ network facility damages must be reported online here.
For enquiries related to your DBYD request please call 1800 626 329.

DIAL BEFORE YOU DIG
www.1100.com.au

To:	Andrew Hunt
Phone:	Not Supplied
Fax:	Not Supplied
Email:	andrew.hunt@ade.group

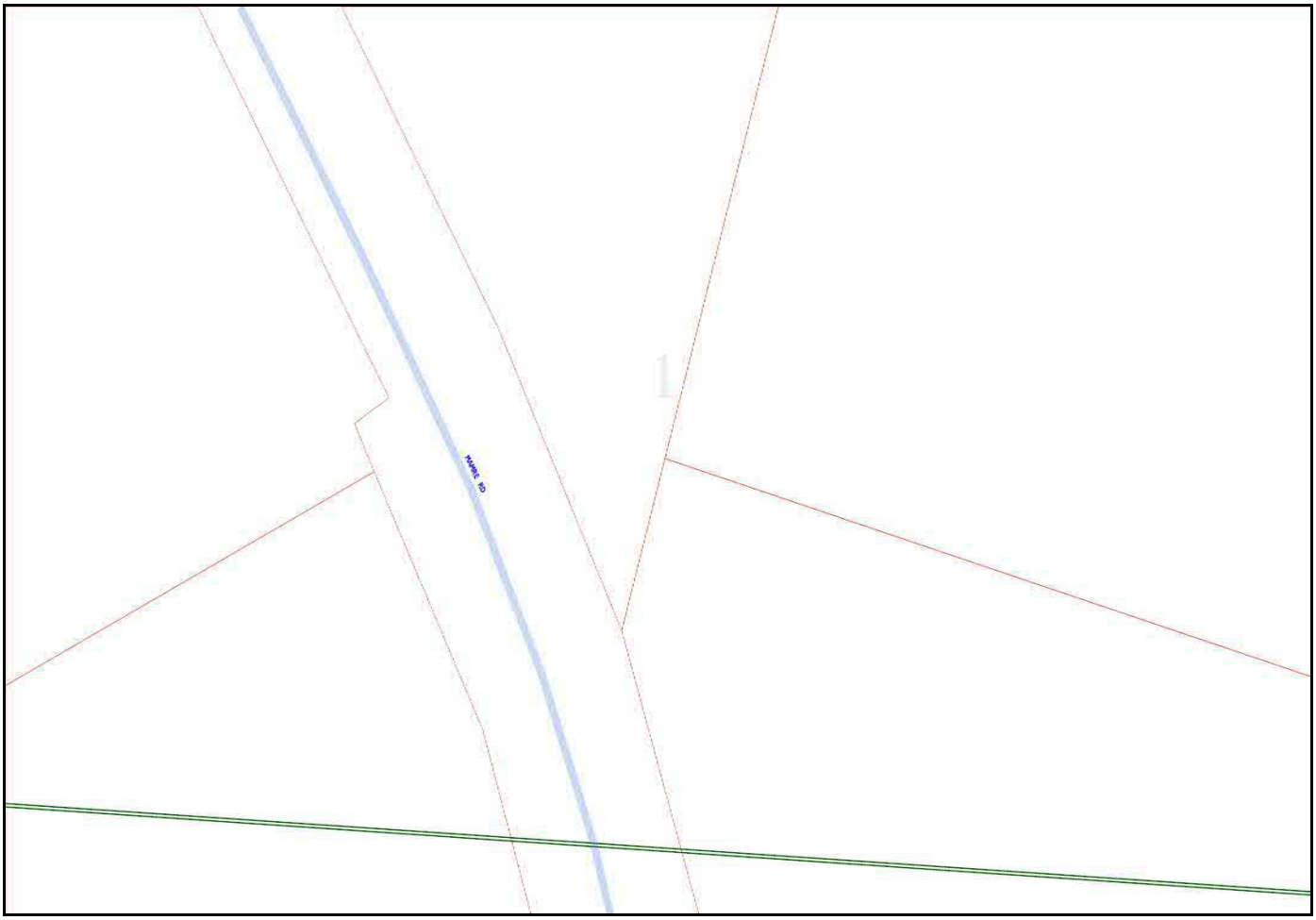
Dial before you dig Job #:	33723003
Sequence #	221801109
Issue Date:	01/03/2023
Location:	1016-1028 Mamre Road , Kemps Creek , NSW , 2178

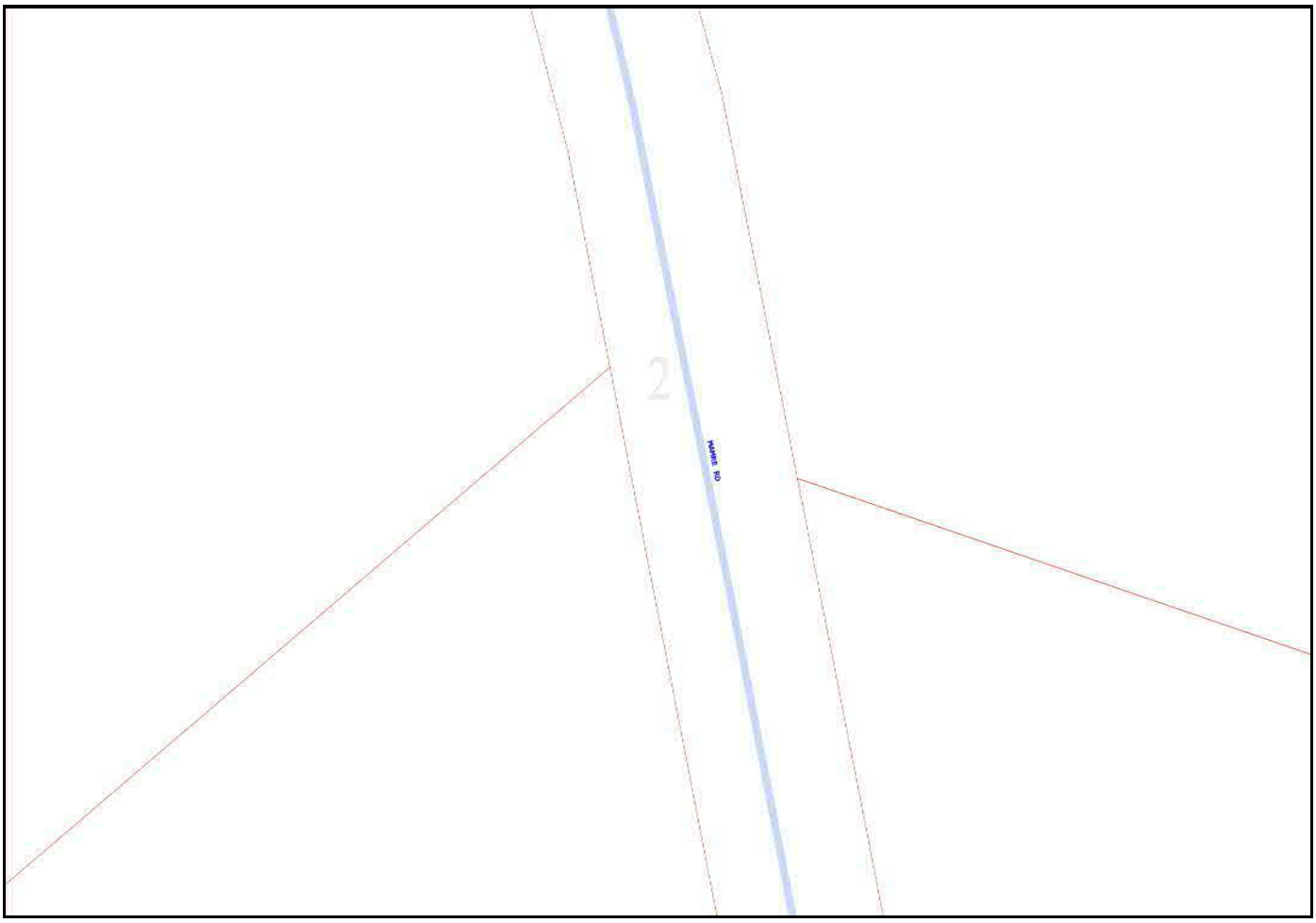
Indicative Plans

2	10	18
3	11	19
4	12	20
5	13	21
6	14	22
7	15	23
8	16	24

LEGEND

34	Parcel and the location
5	Pit with size "5"
2E	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
2 PO – T- 25.0m P40 – 20.0m 5 9	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
2 10.0m 5 9	2 Direct buried cables between pits of sizes ,"5" and "9" are 10.0m apart.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Copper/RF/Fibre) cables.
5 9	Trench containing only DESIGNED/PLANNED (Copper/RF/Fibre/Power) cables.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Power) cables.
BROADWAY ST	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000 1 cm equals 20 m


PAPPS RD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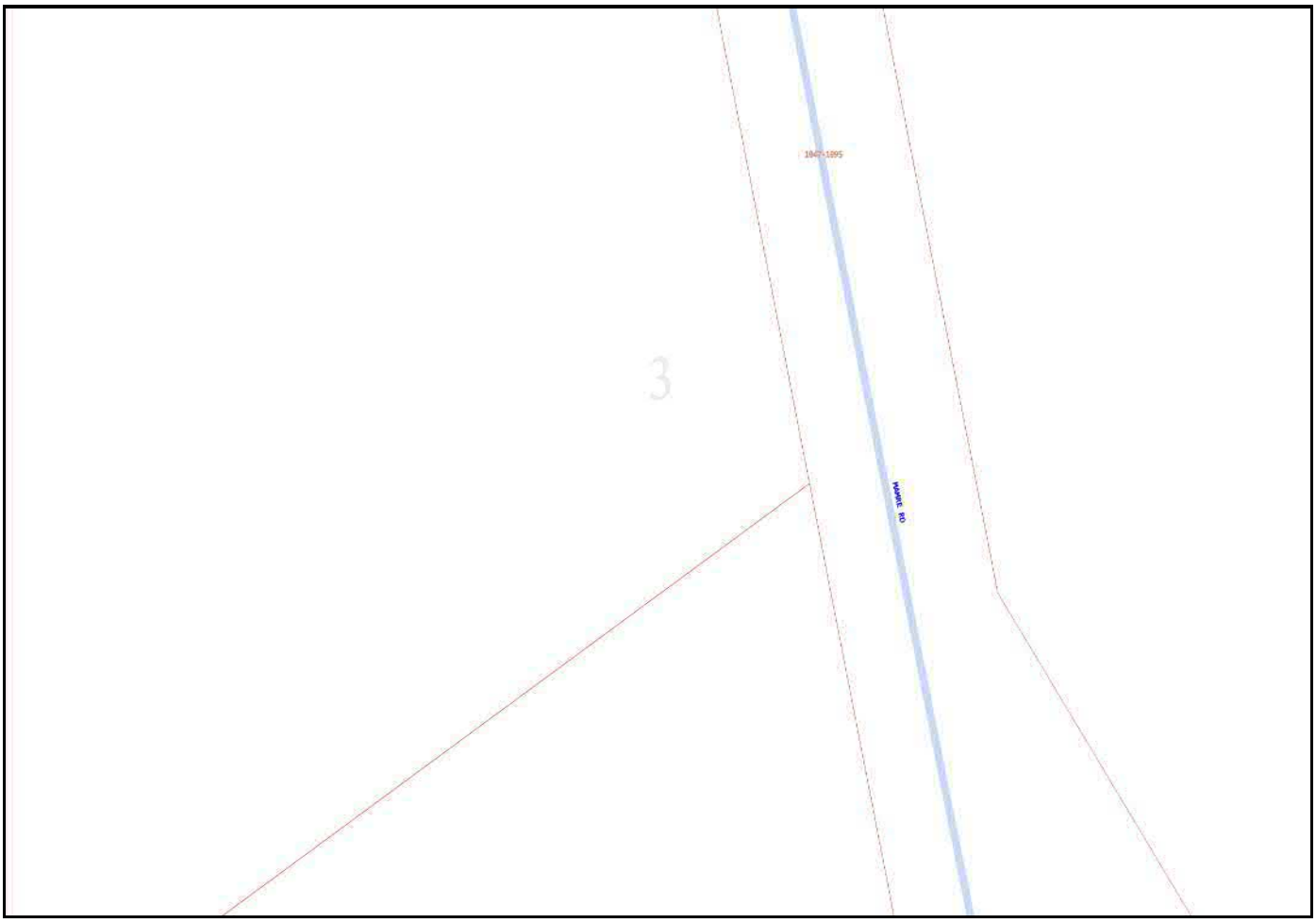
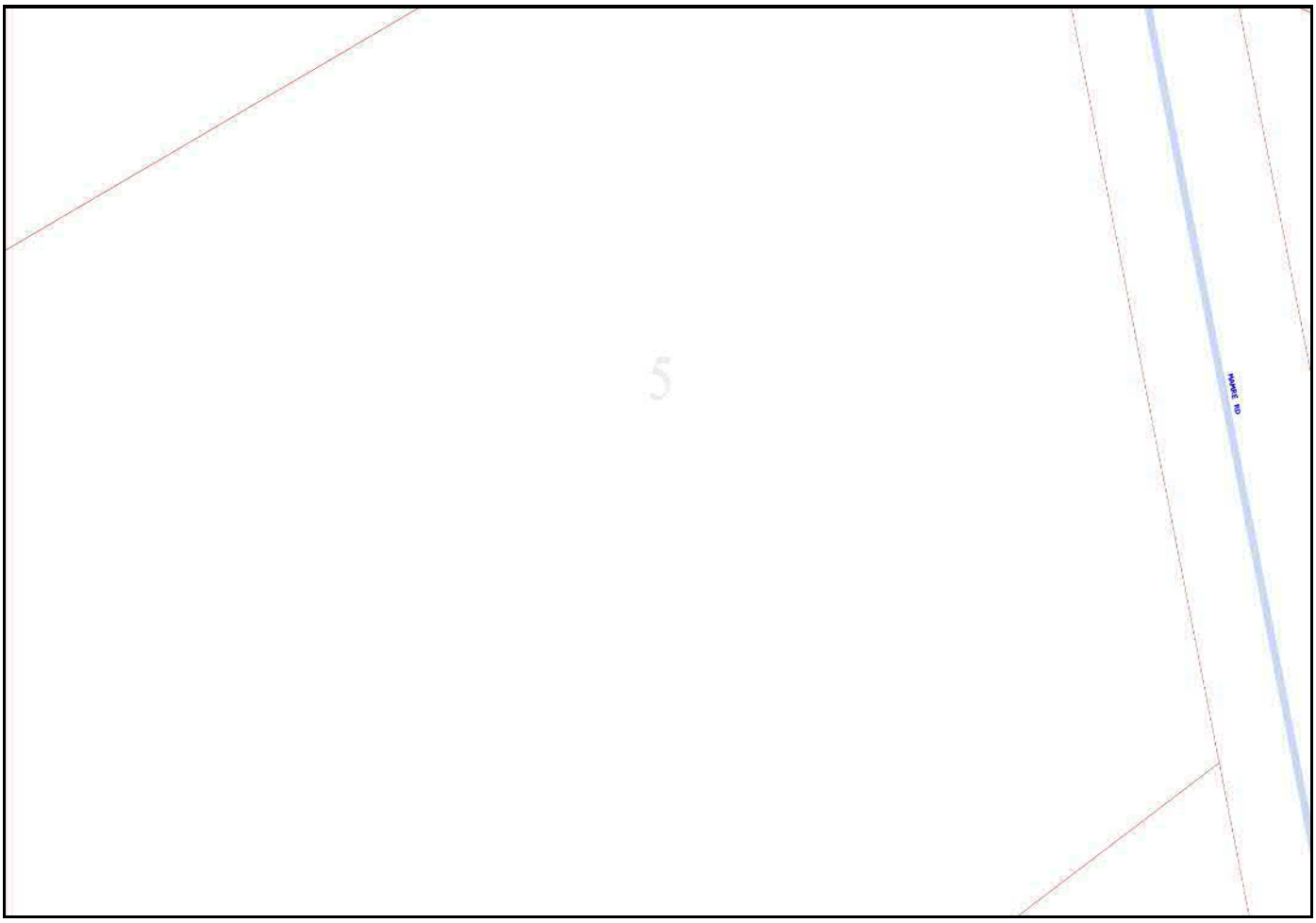
HOWE RD


1047-1095
3
HOWES RD


4
ABBOTTS RD
HAWKE RD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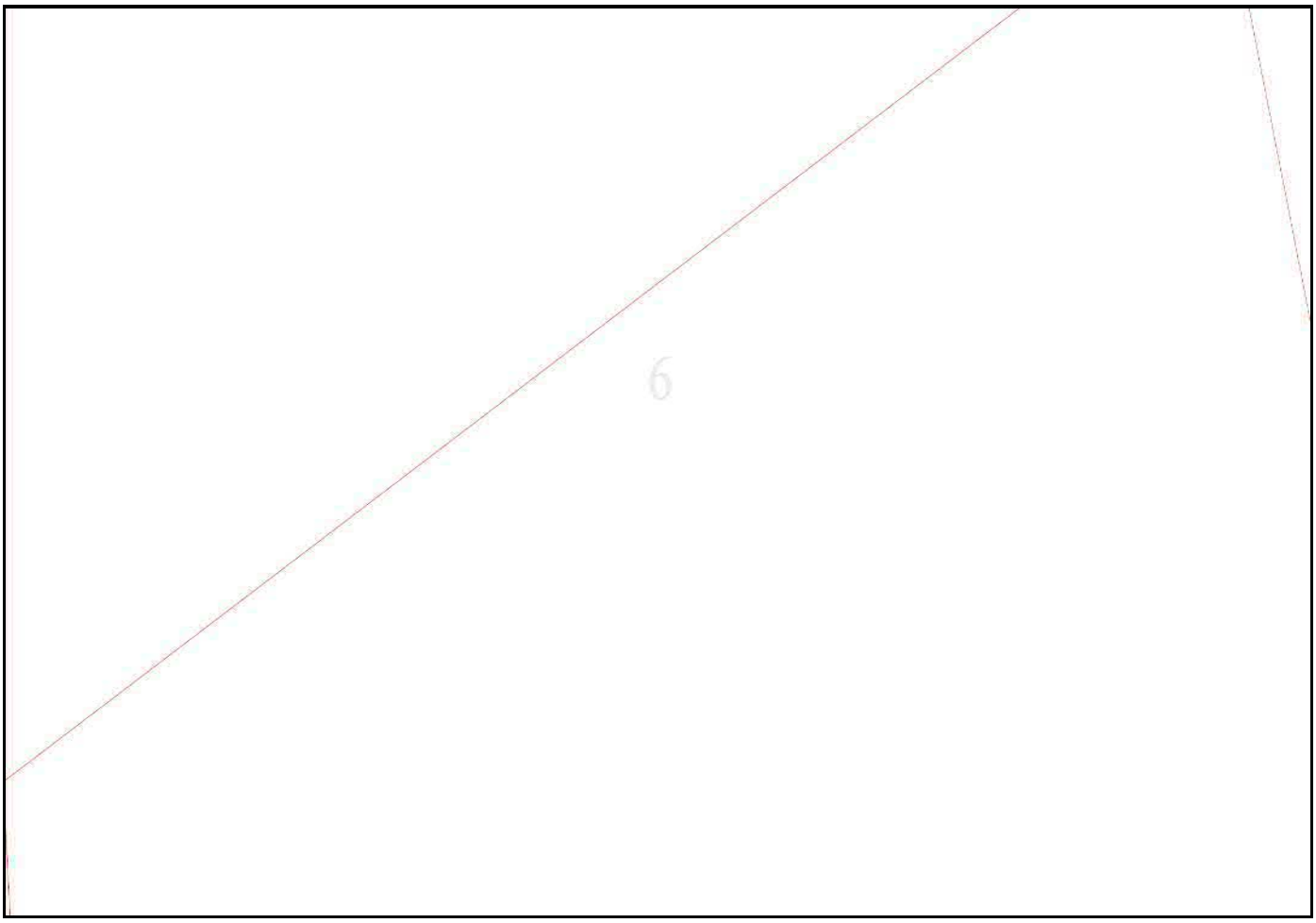
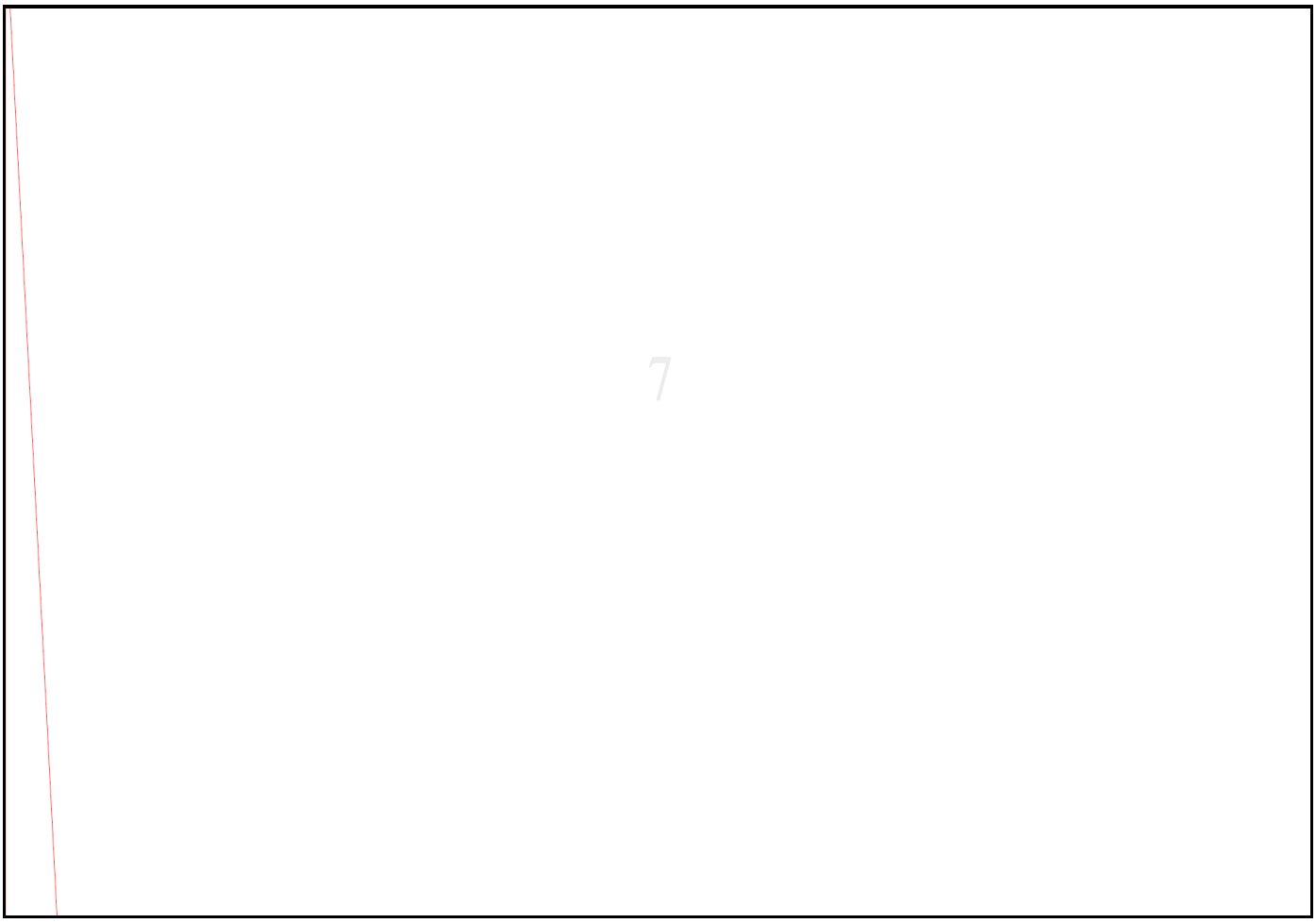
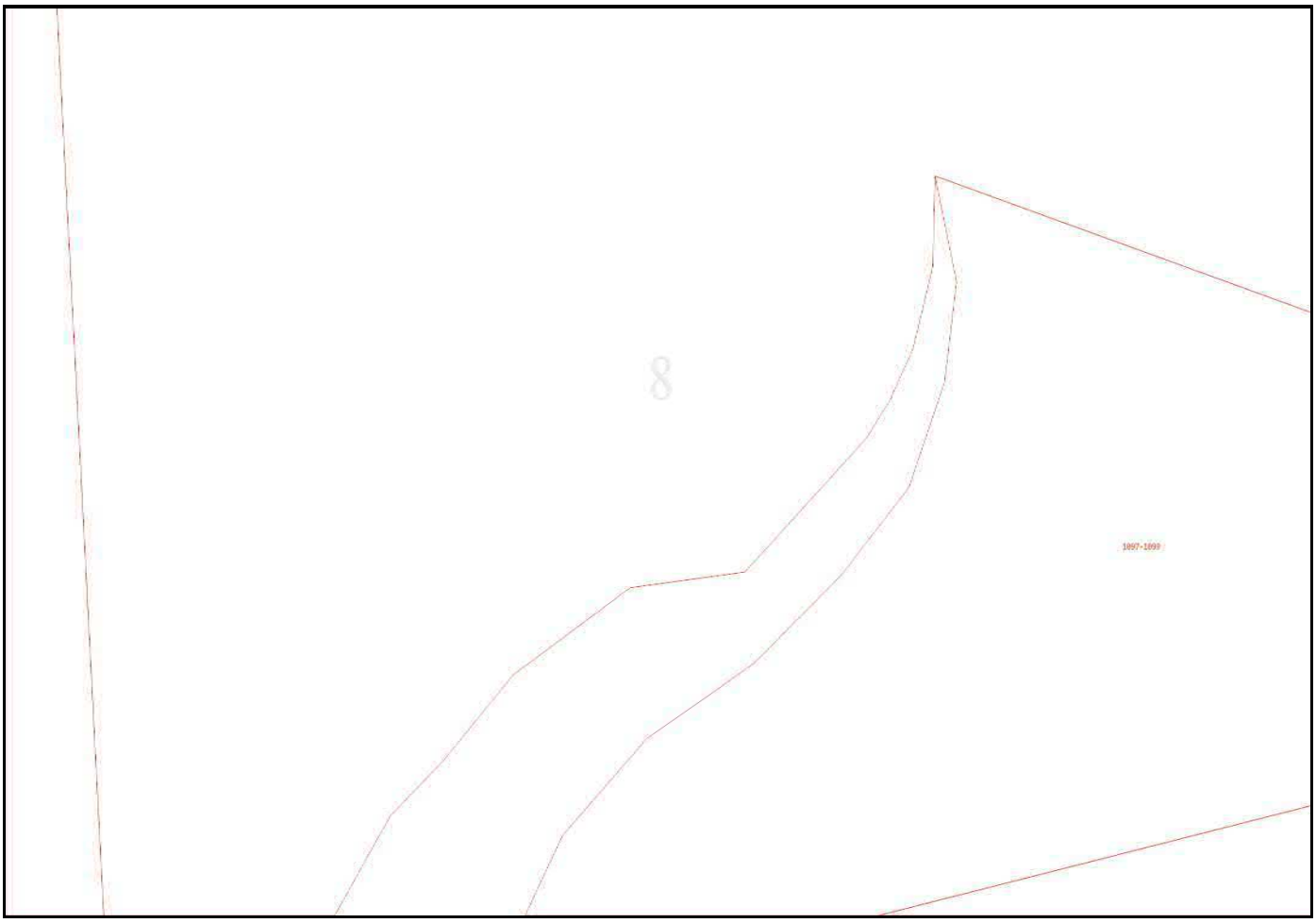
OLD 3RAM



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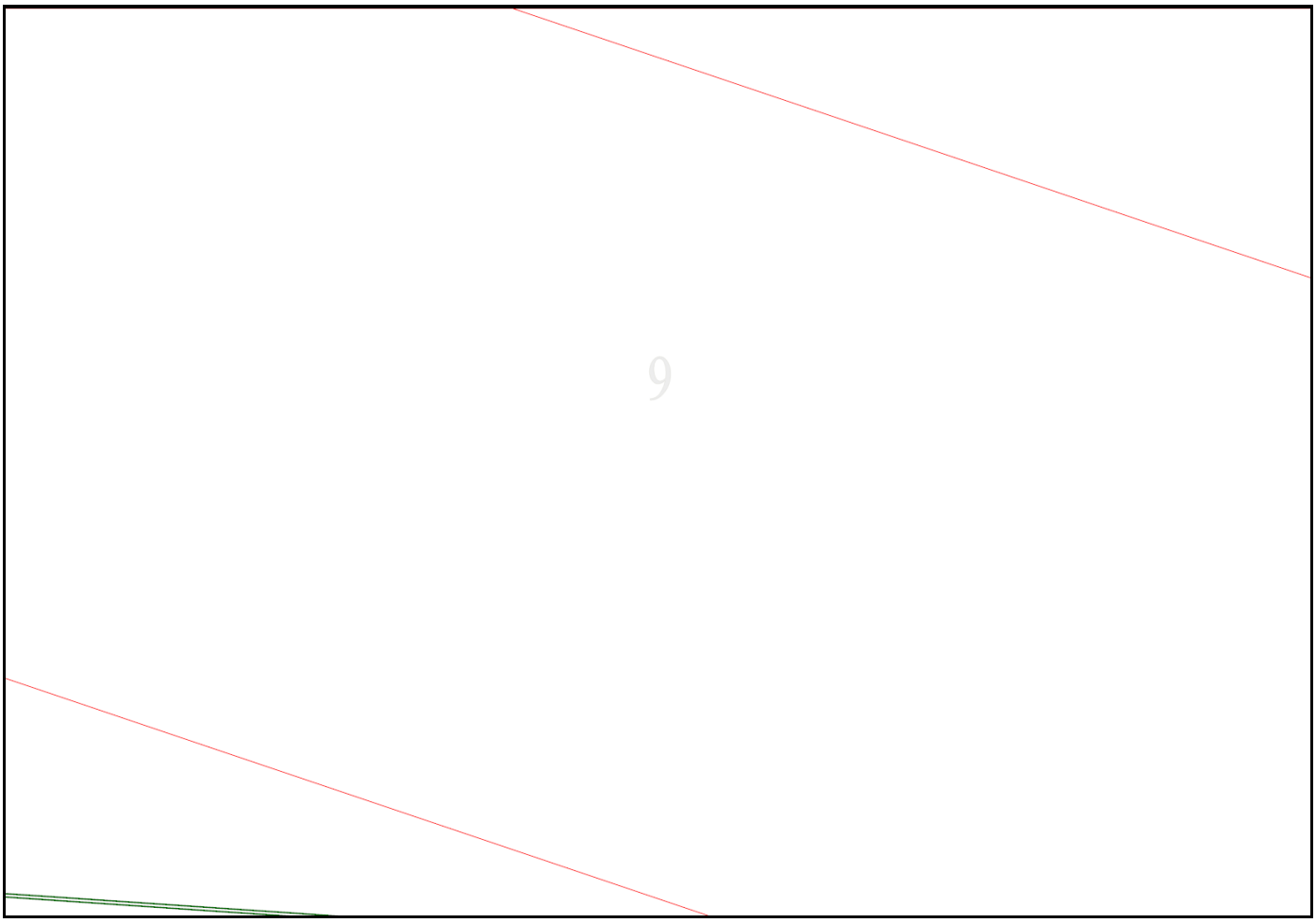
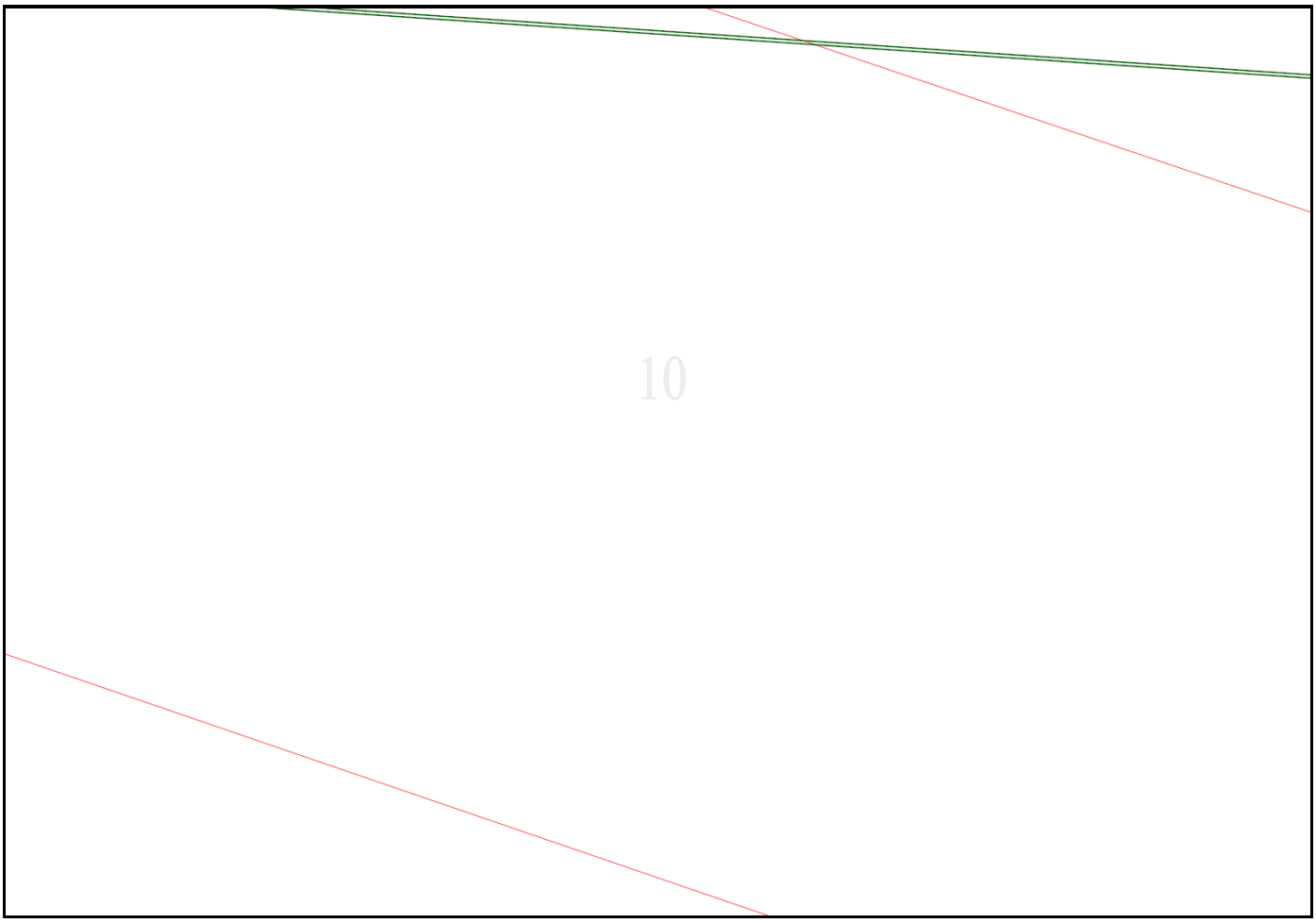
1897-1899

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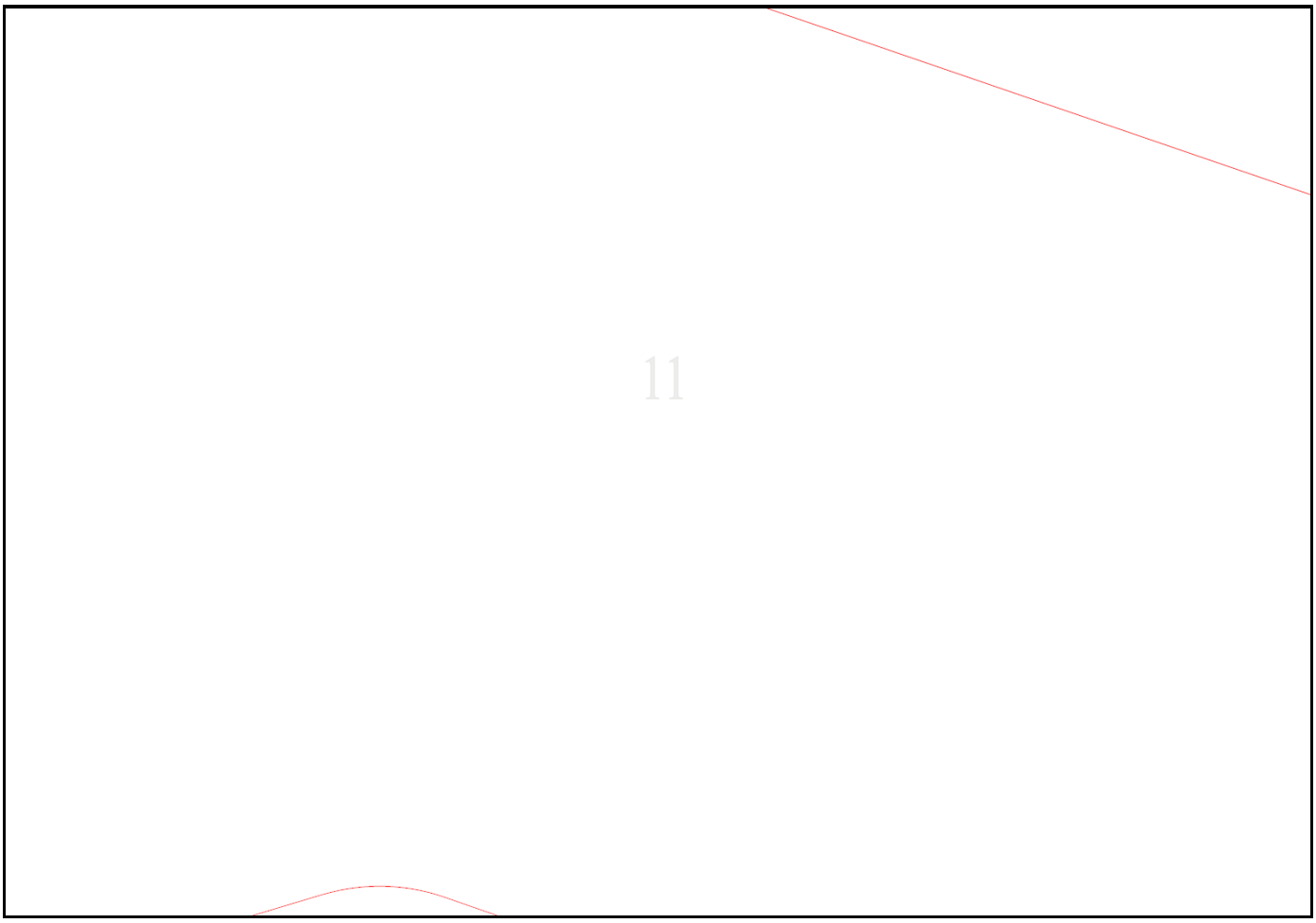
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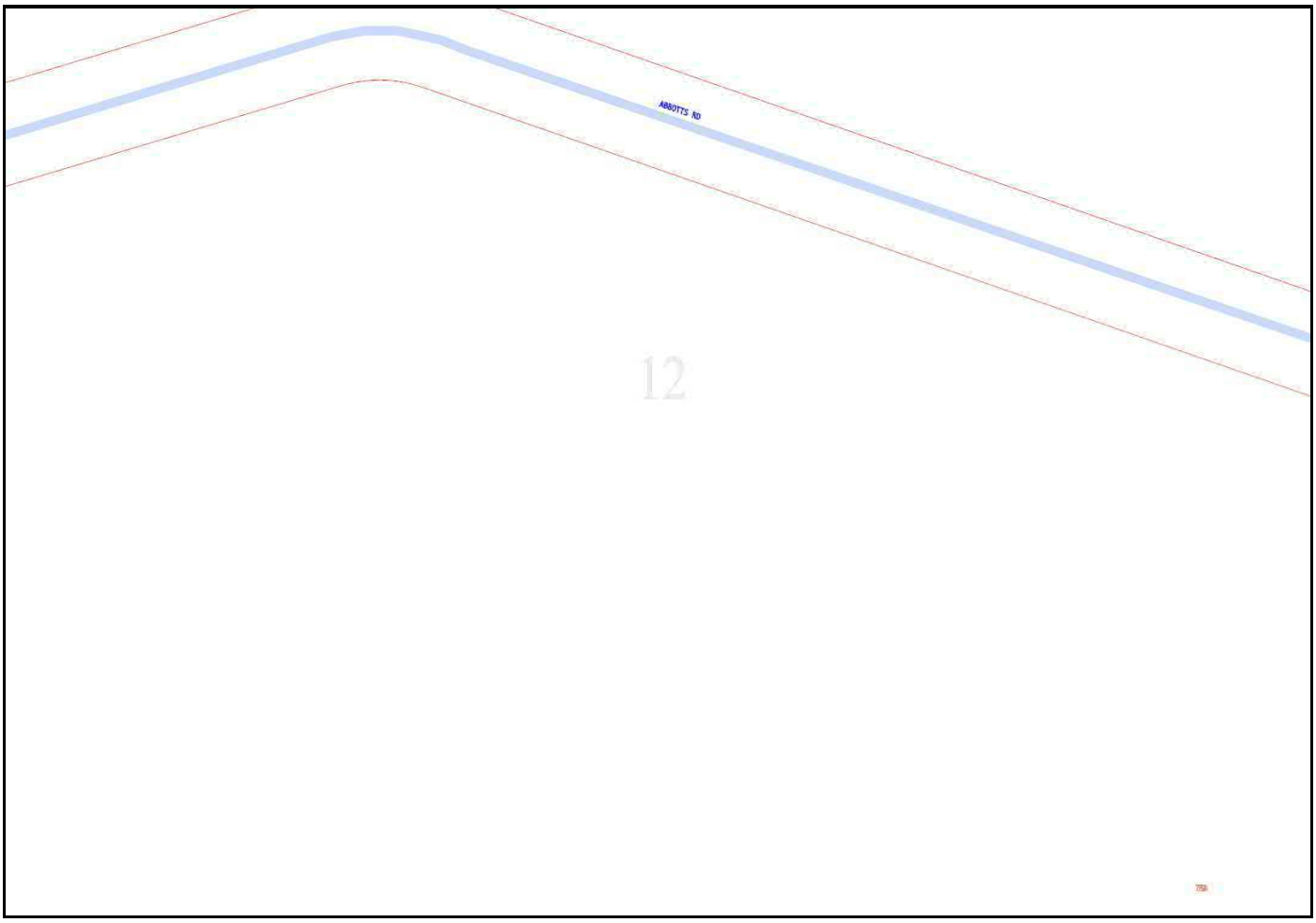
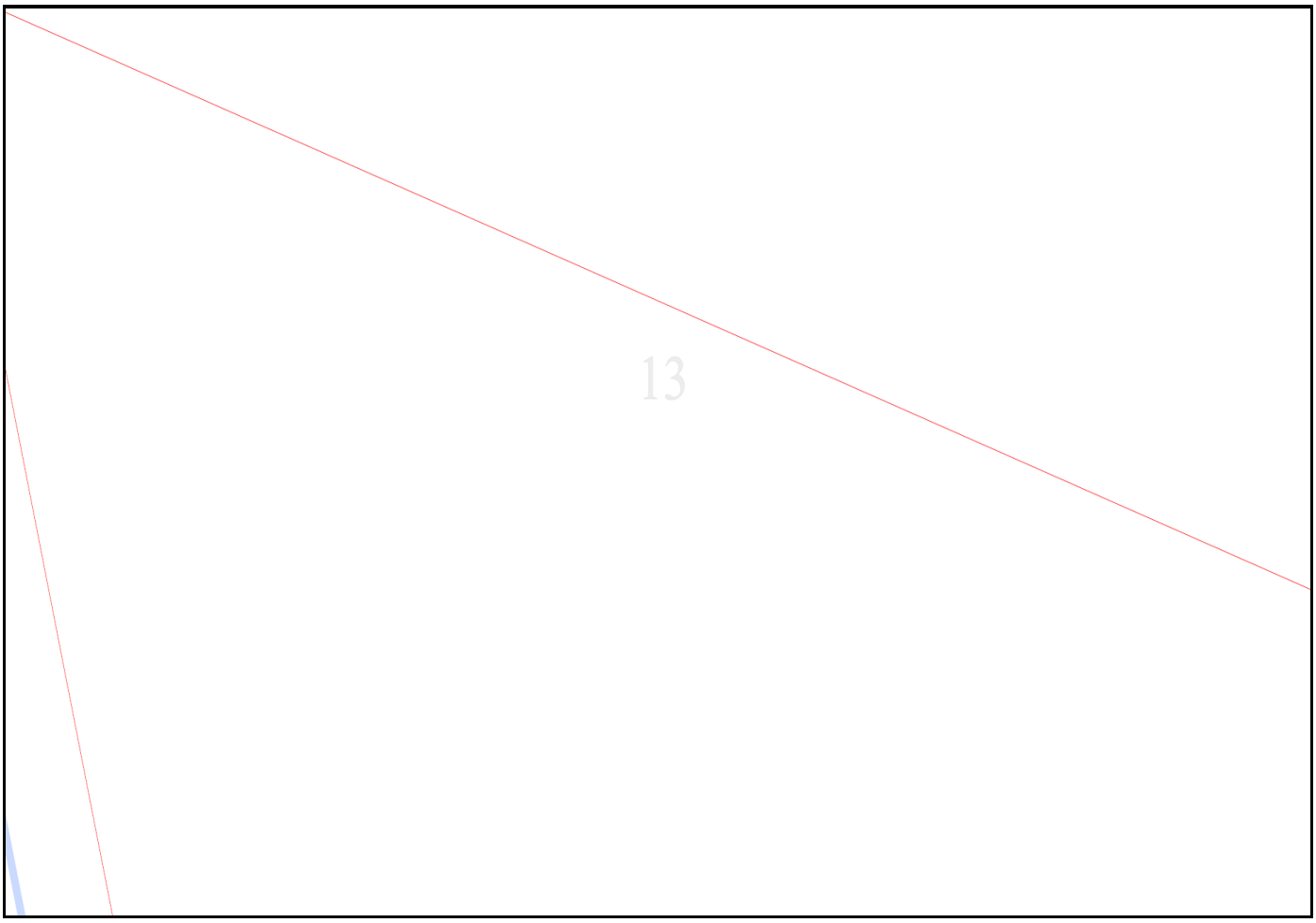

ABBOTTS RD
12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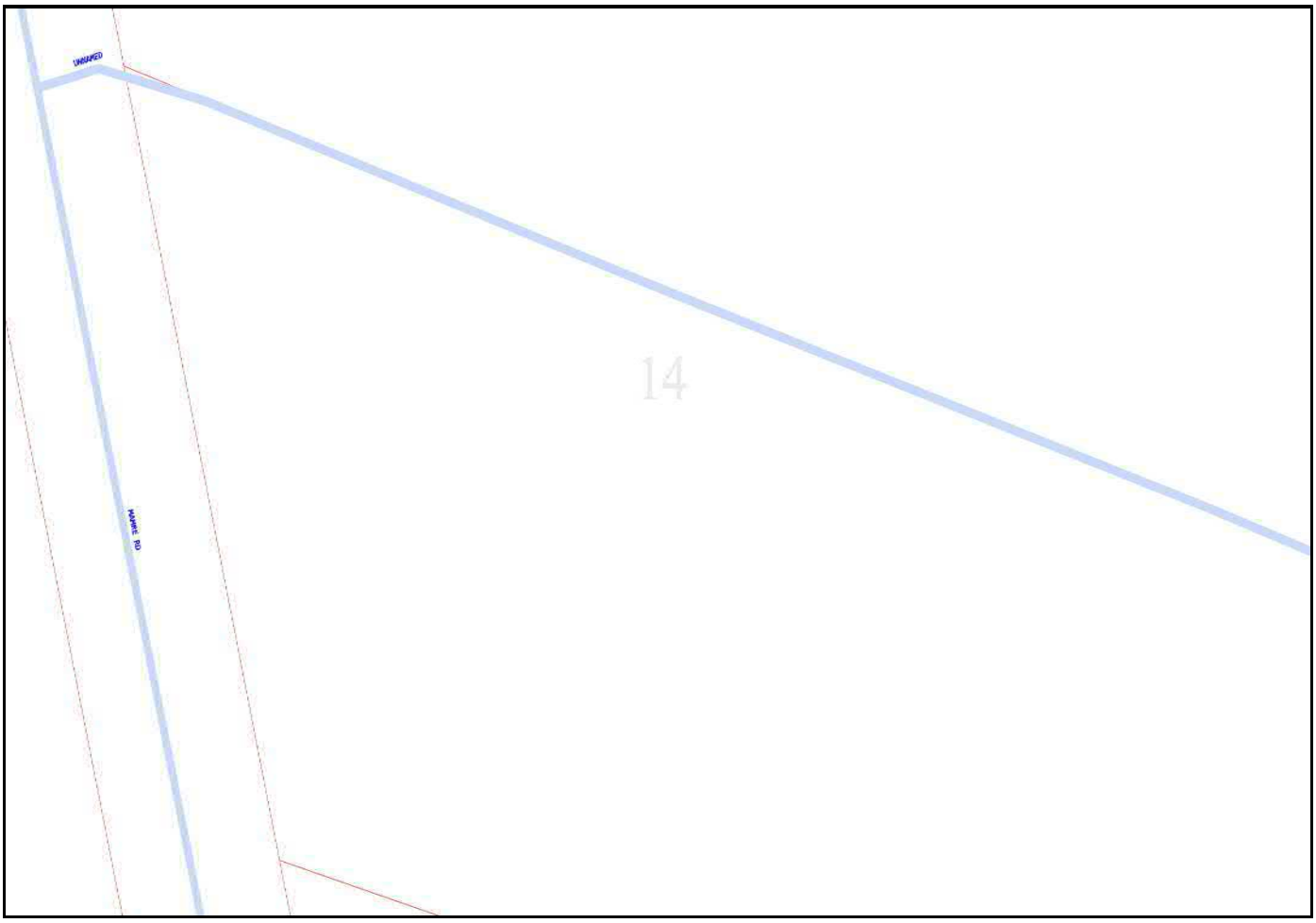
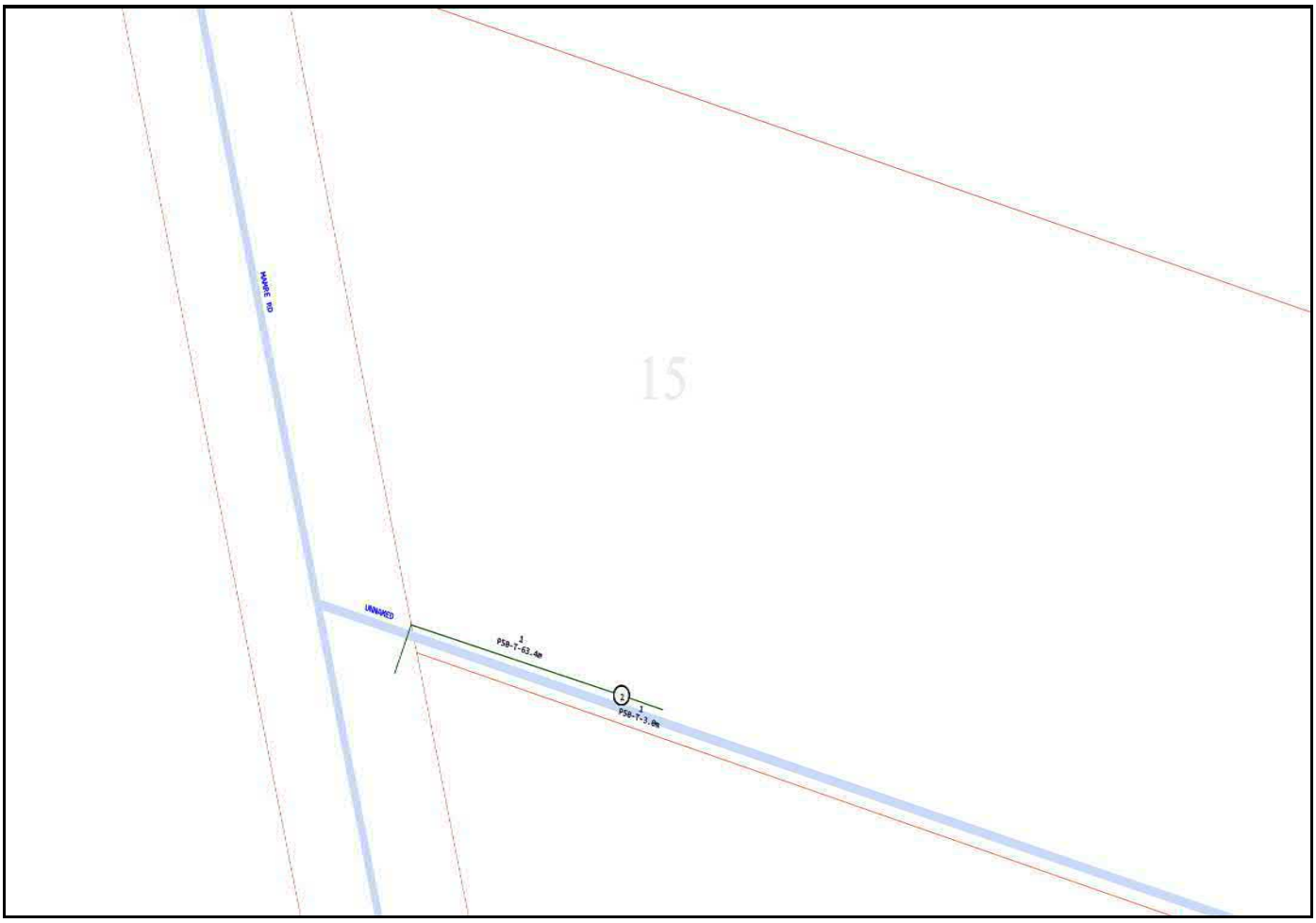

UNNAMED
14
MAINE RD


MAPLE RD
UNNAMED
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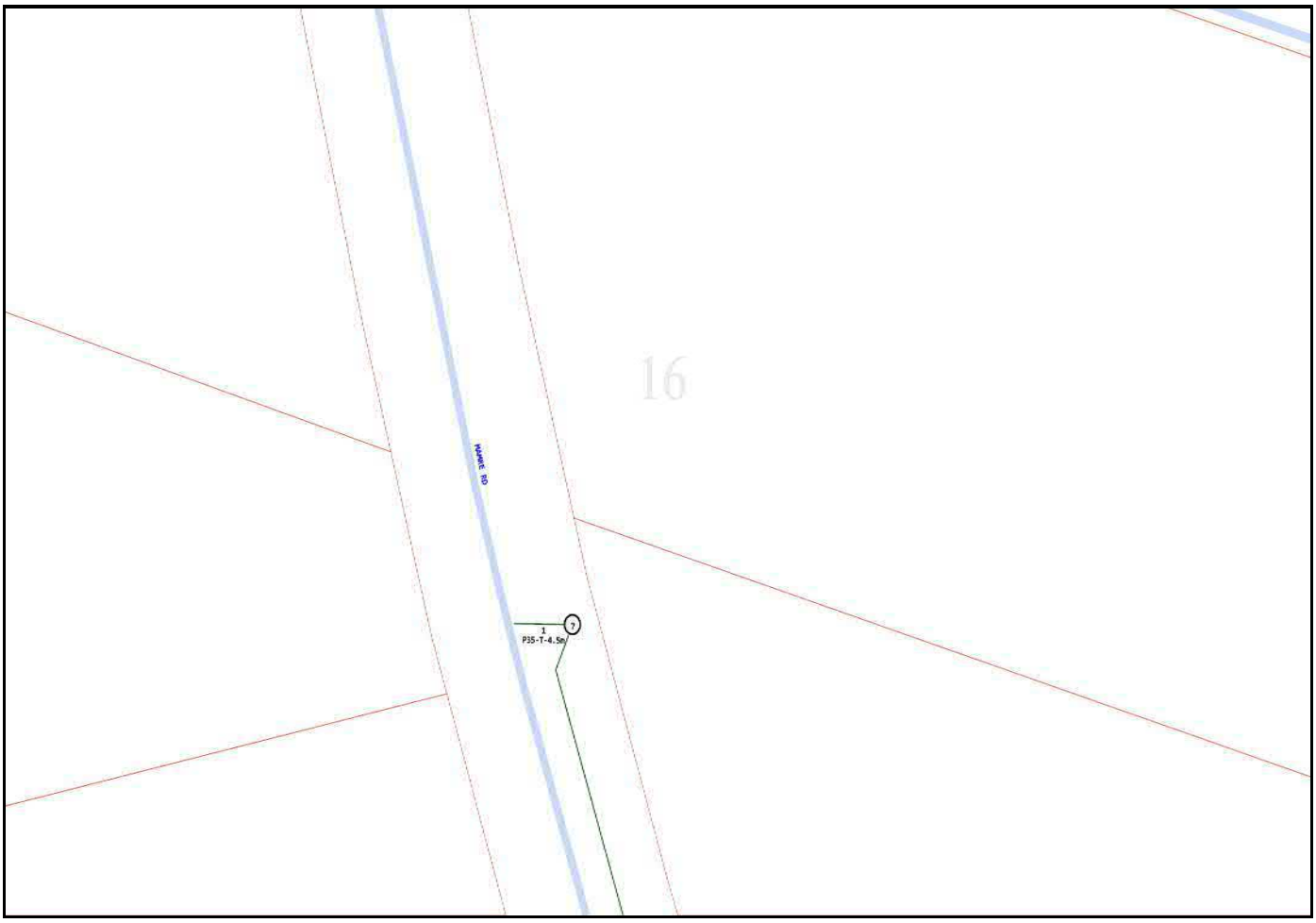
1
P58-T-63.4m
2
1
P58-T-3.0m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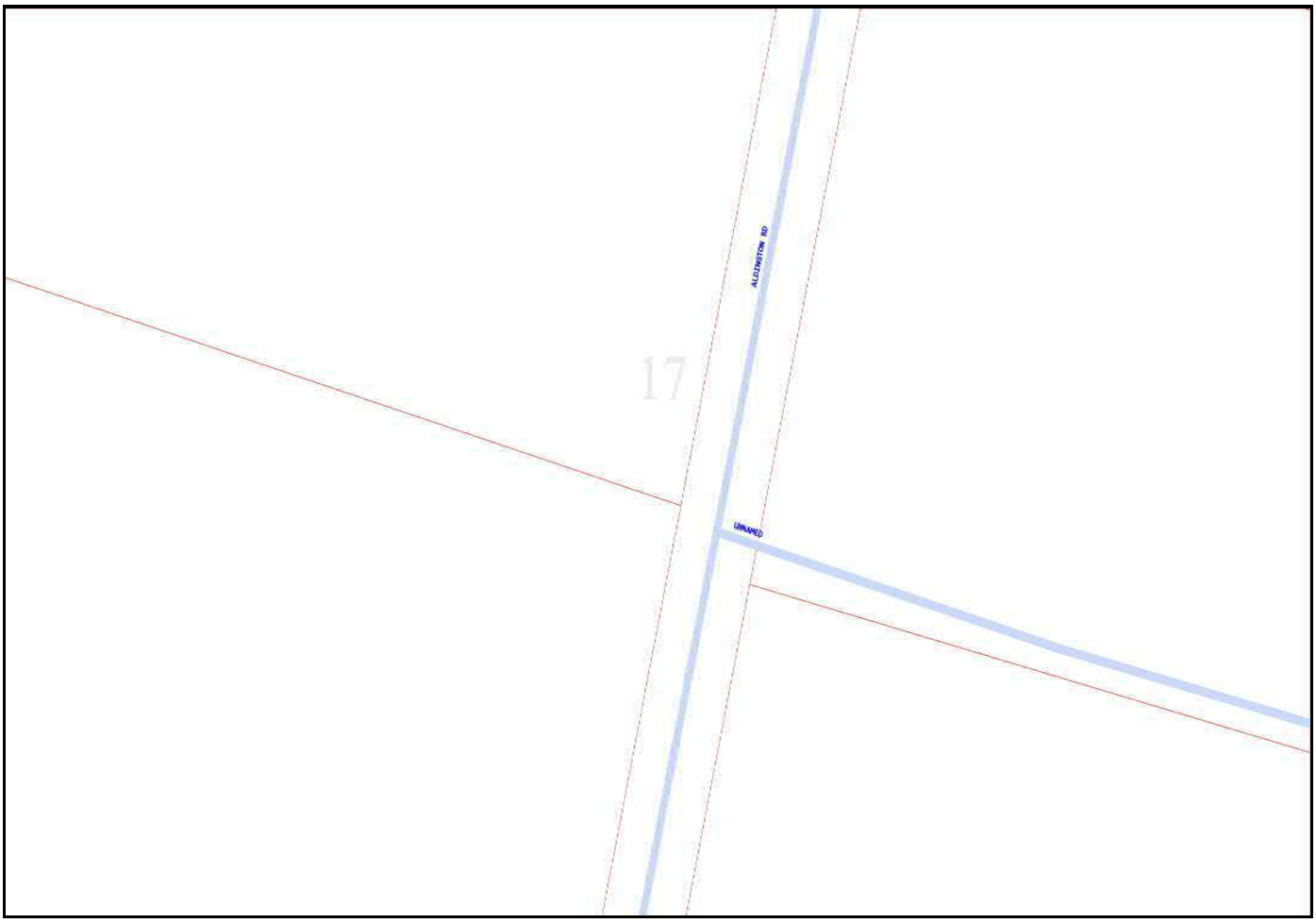
HUME RD
1
P35-T-4.5m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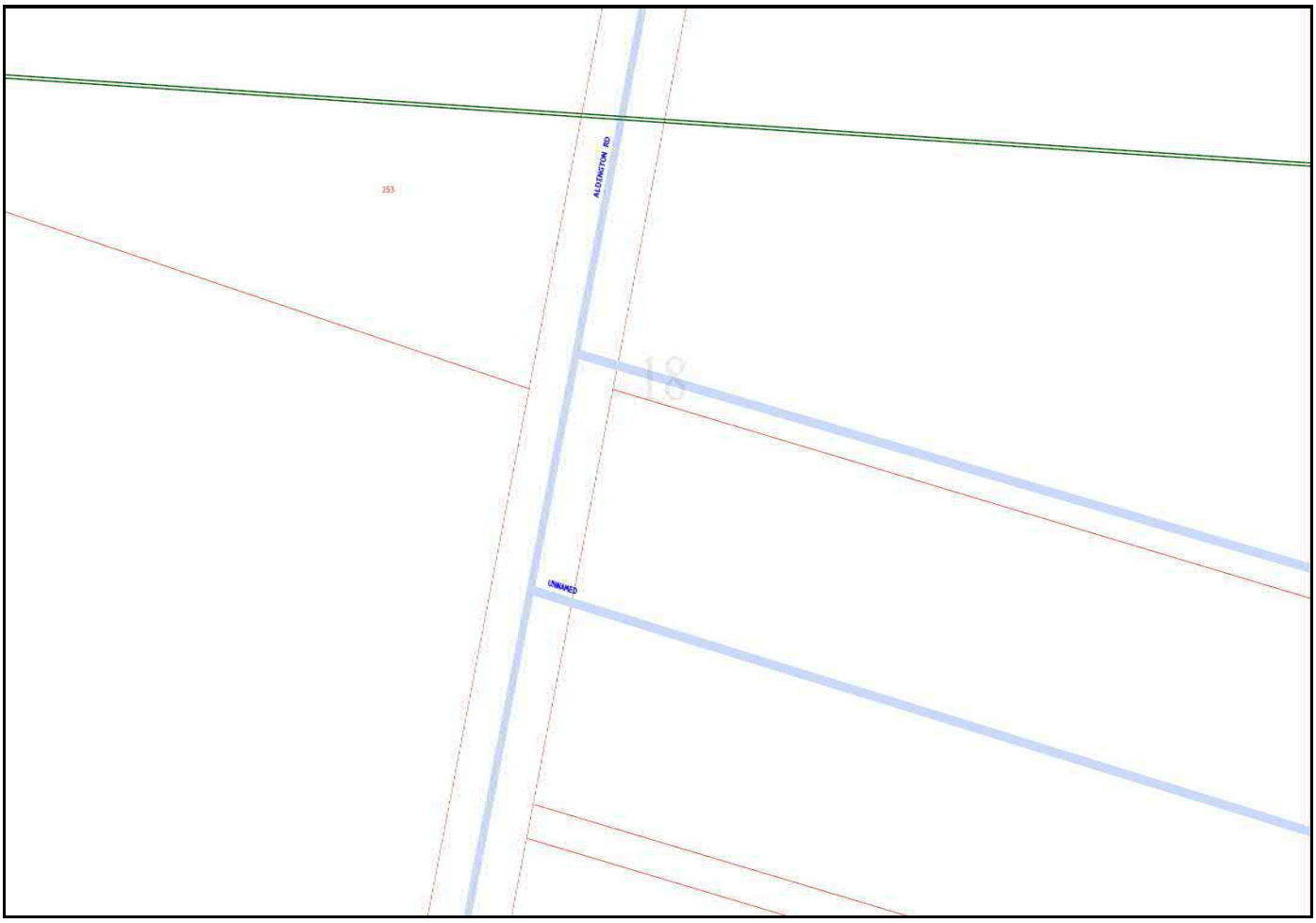
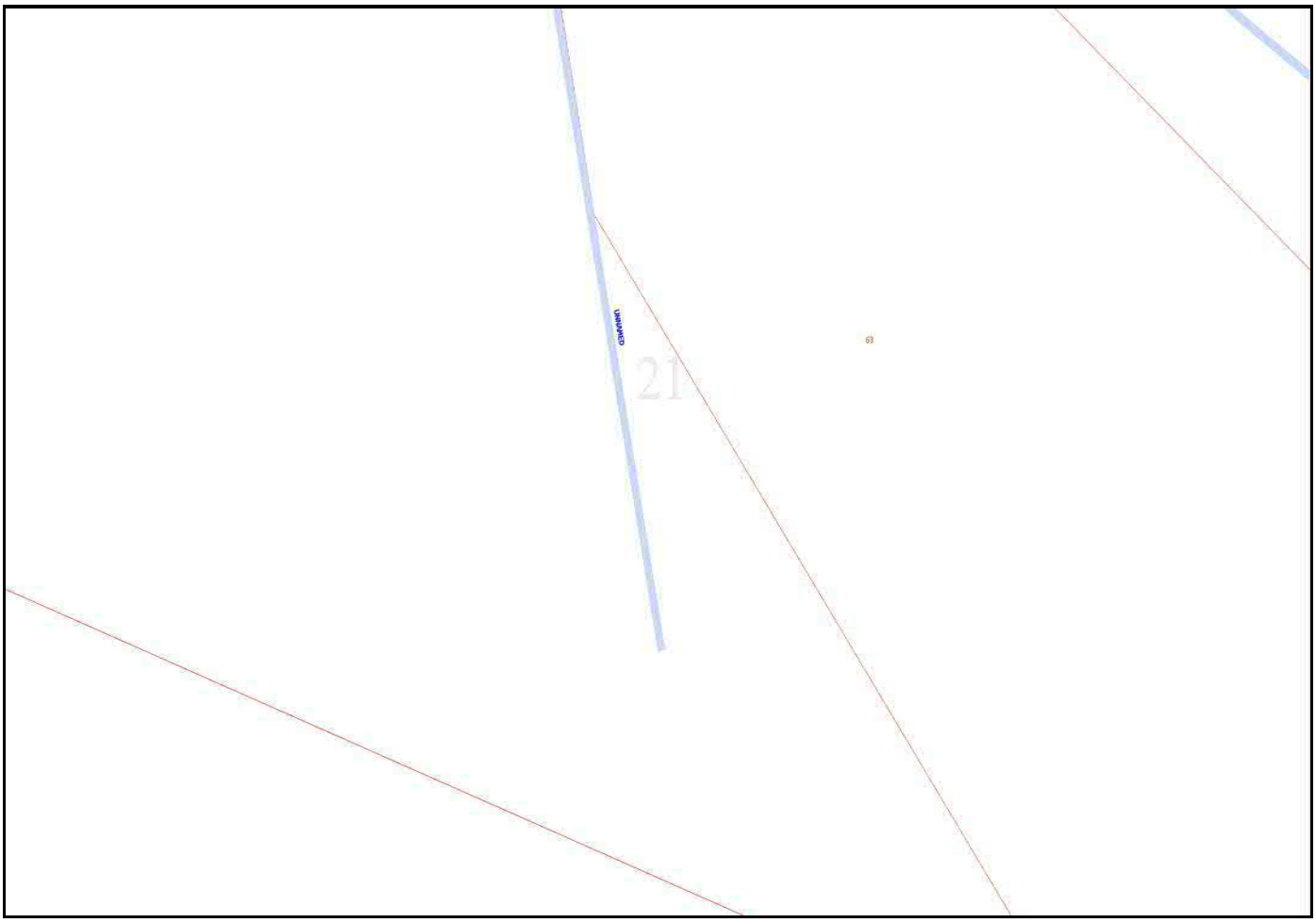
ALDINGTON RD
UNNAMED


153
ALDINGTON RD
18
UNNAMED


19
ALDINGTON RD
290


ALDINGTON RD
20
ABBOTTS RD
UNNAMED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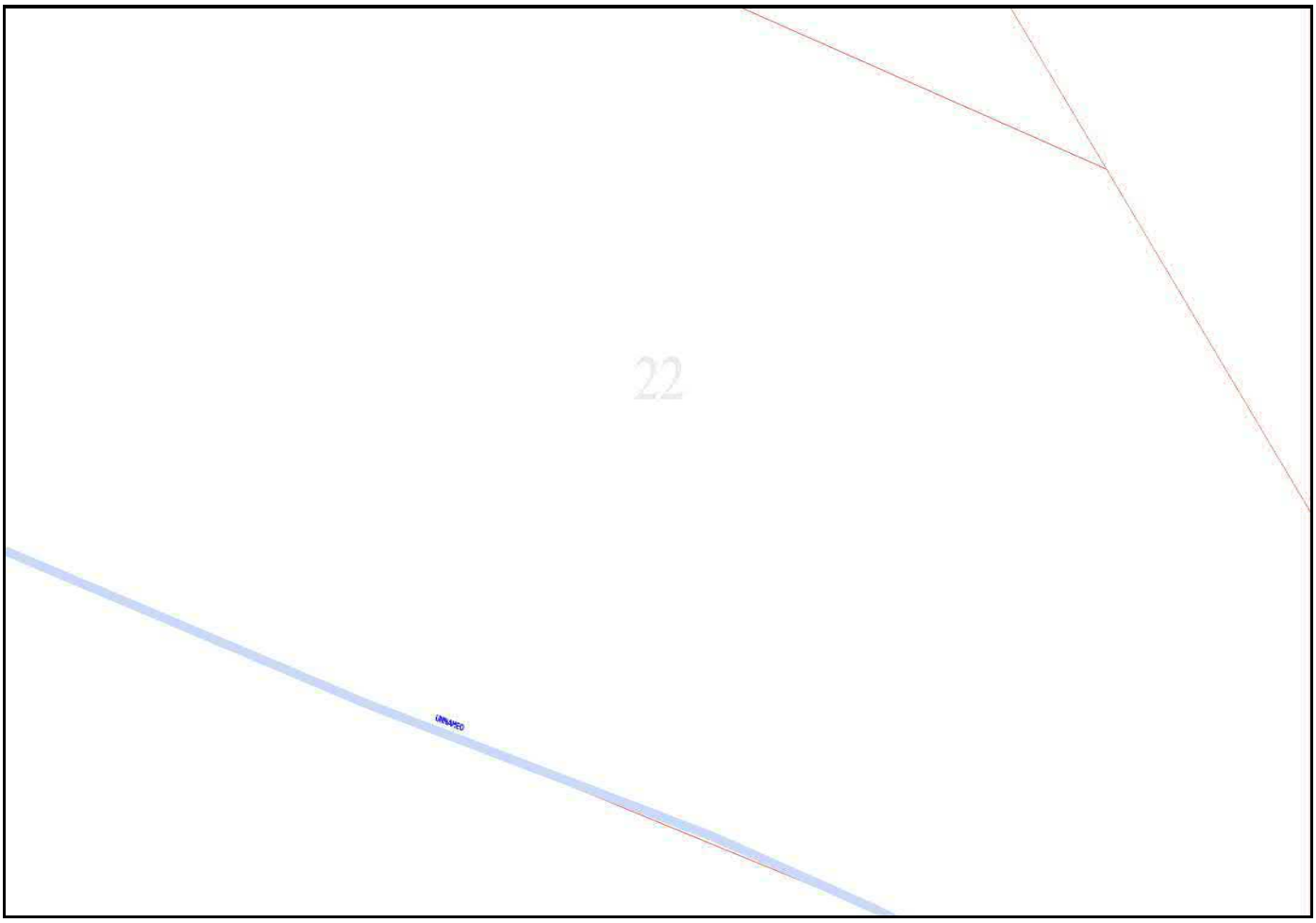
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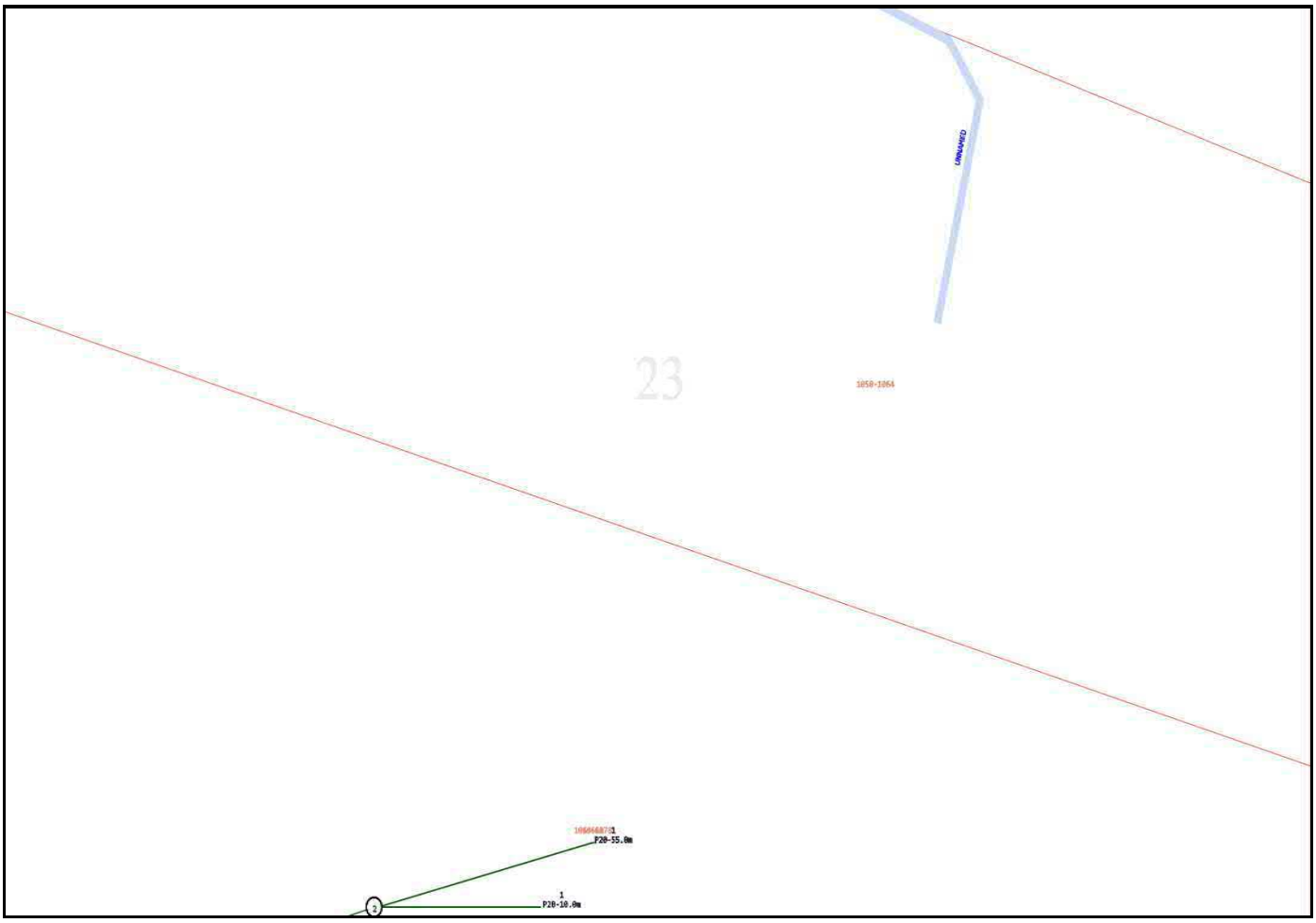
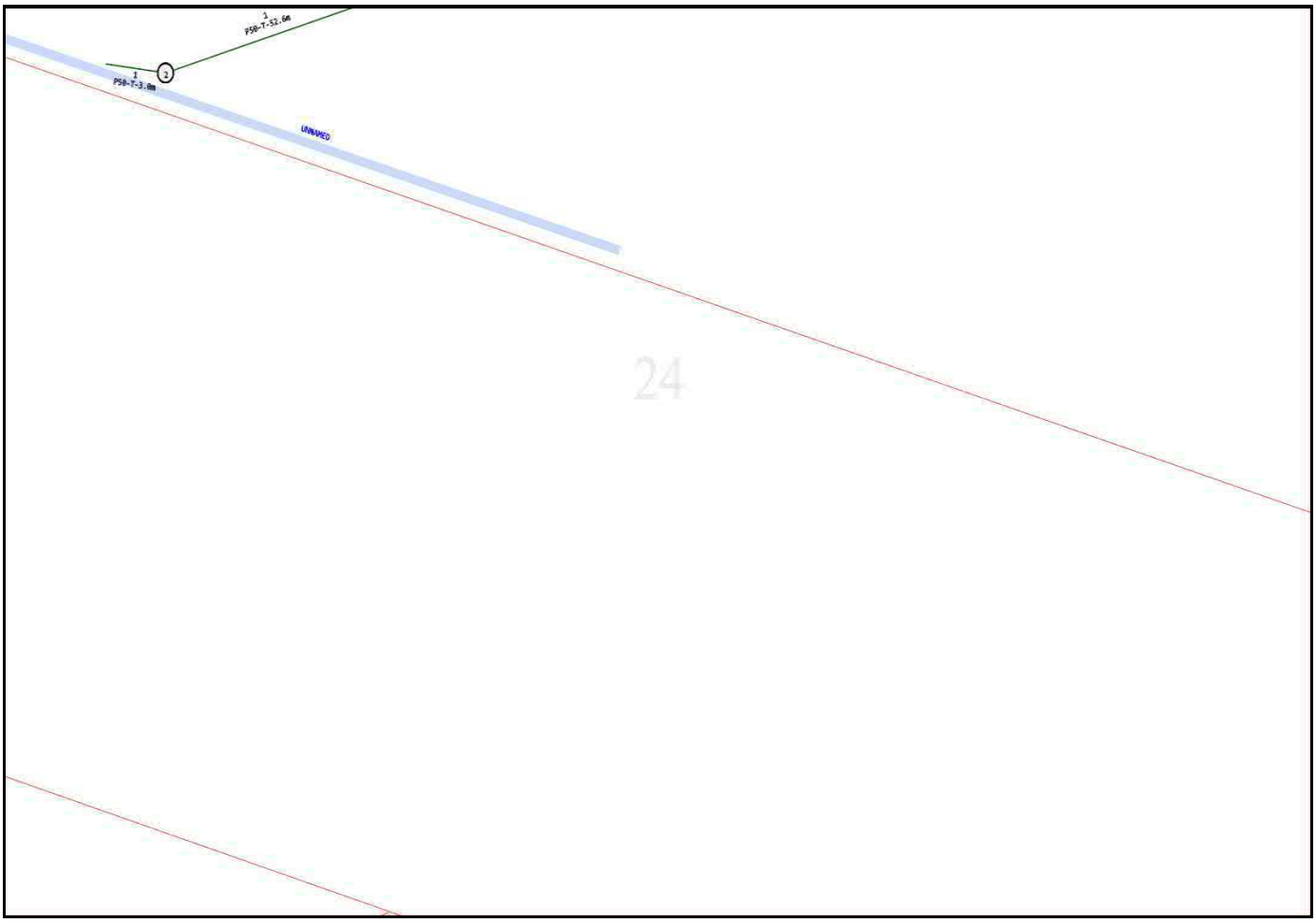

UNNAMED
23
1050-1064
P20-55.0m
1
P20-10.0m
2



Emergency Contacts

You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.

To:	Andrew Hunt
Phone:	Not Supplied
Fax:	Not Supplied
Email:	andrew.hunt@ade.group

Dial before you dig Job #:	33723003
Sequence #	221801109
Issue Date:	01/03/2023
Location:	1016-1028 Mamre Road , Kemps Creek , NSW , 2178

Information

The area of interest requested by you contains one or more assets.

nbn™ Assets	Search Results
Communications	Asset identified
Electricity	No assets

In this notice **nbn™ Facilities** means *underground fibre optic, telecommunications and/or power facilities, including but not limited to cables, owned and controlled by **nbn™***

Location of **nbn™** Underground Assets

We thank you for your enquiry. In relation to your enquiry at the above address:

- **nbn's** records indicate that there **ARE** **nbn™** Facilities in the vicinity of the location identified above ("Location").
- **nbn** indicative plan/s are attached with this notice ("Indicative Plans").
- The Indicative Plan/s show general depth and alignment information only and are not an exact, scale or accurate depiction of the location, depth and alignment of **nbn™** Facilities shown on the Plan/s.
- In particular, the fact that the Indicative Plans show that a facility is installed in a straight line, or at uniform depth along its length cannot be relied upon as evidence that the facility is, in fact, installed in a straight line or at uniform depth.
- You should read the Indicative Plans in conjunction with this notice and in particular, the notes below.
- You should note that, at the present time, the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables. As such, consistent with the notes below, particular care must be taken by you to make your own enquiries and investigations to precisely locate any power cables and manage the risk arising from such cables accordingly.
- The information contained in the Indicative Plan/s is valid for 28 days from the date of issue set out above.You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators, e.g DBYD Certified Locators, at your cost to locate **nbn™**

Facilities during any activities you carry out on site).

We thank you for your enquiry and appreciate your continued use of the Dial Before You Dig Service. For any enquiries related to moving assets or Planning and Design activities, please visit the **nbn** Commercial Works website to complete the online application form. If you are planning to excavate and require further information, please email dbyd@nbnco.com.au or call 1800 626 329.

Notes:

1. You are now aware that there are **nbn™** Facilities in the vicinity of the above property that could be damaged as a result activities carried out (or proposed to be carried out) by you in the vicinity of the Location.
2. You should have regard to section 474.6 and 474.7 of the *Criminal Code Act 1995* (CoA) which deals with the consequences of interfering or tampering with a telecommunications facility. Only persons authorised by **nbn** can interact with **nbn's** network facilities.
3. Any information provided is valid only for **28 days** from the date of issue set out above.

Referral Conditions

The following are conditions on which **nbn** provides you with the Indicative Plans. By accepting the plans,you are agreeing to these conditions. These conditions are in addition, and not in replacement of, any duties and obligations you have under applicable law.

1. **nbn** does not accept any responsibility for any inaccuracies of its plans including the Indicative Plans. You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators, e.g DBYD Certified Locators, at your cost to locate **nbn™** Facilities during any activities you carry out on site).
2. You acknowledge that **nbn** has specifically notified you above that the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables.
3. You should not assume that **nbn™** Facilities follow straight lines or are installed at uniformed depths along their lengths, even if they are indicated on plans provided to you. Careful onsite investigations are essential to locate the exact position of cables.
4. In carrying out any works in the vicinity of **nbn™** Facilities, you must maintain the following minimum clearances:
    - 300mm when laying assets inline, horizontally or vertically.
    - 500mm when operating vibrating equipment, for example: jackhammers or vibrating plates.
    - 1000mm when operating mechanical excavators.
    - Adherence to clearances as directed by other asset owner's instructions and take into account any uncertainty for power cables.
5. You are aware that there are inherent risks and dangers associated with carrying out work in the vicinity of underground facilities (such as **nbn™** fibre optic,copper and coaxial cables,and power cable feed to **nbn™** assets).Damage to underground electric cables may result in:
    - Injury from electric shock or severe burns, with the possibility of death.
    - Interruption of the electricity supply to wide areas of the city.
    - Damage to your excavating plant.
    - Responsibility for the cost of repairs.
6. You must take all reasonable precautions to avoid damaging **nbn™** Facilities. These precautions may include but not limited to the following:
    - All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs if present must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the likelihood of damage to the cable, for example: the blades of hand equipment should be aligned parallel to the line of the cable rather than digging across the cable.
    - If any undisclosed underground cables are located, notify **nbn** immediately.

- All personnel must be properly briefed, particularly those associated with the use of earth-moving equipment, trenching, boring and pneumatic equipment.
- The safety of the public and other workers must be ensured.
- All excavations must be undertaken in accordance with all relevant legislation and regulations.

7. You will be responsible for all damage to **nbn™** Facilities that are connected whether directly, or indirectly with work you carry out (or work that is carried out for you or on your behalf) at the Location. This will include, without limitation, all losses expenses incurred by **nbn** as a result of any such damage.
8. You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.
9. Except to the extent that liability may not be capable of lawful exclusion, **nbn** and its servants and agents and the related bodies corporate of **nbn** and their servants and agents shall be under no liability whatsoever to any person for any loss or damage (including indirect or consequential loss or damage) however caused (including, without limitation, breach of contract negligence and/or breach of statute) which may be suffered or incurred from or in connection with this information sheet or any plans(including Indicative Plans) attached hereto. Except as expressly provided to the contrary in this information sheet or the attached plans(including Indicative Plans), all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

All works undertaken shall be in accordance with all relevant legislations, acts and regulations applicable to the particular state or territory of the Location. The following table lists all relevant documents that shall be considered and adhered to.

State/Territory	Documents
National	Work Health and Safety Act 2011
	Work Health and Safety Regulations 2011
	Safe Work Australia - Working in the Vicinity of Overhead and Underground Electric Lines (Draft)
	Occupational Health and Safety Act 1991
NSW	Electricity Supply Act 1995
	Work Cover NSW - Work Near Underground Assets Guide
	Work Cover NSW - Excavation Work: Code of Practice
VIC	Electricity Safety Act 1998
	Electricity Safety (Network Asset) Regulations 1999
QLD	Electrical Safety Act 2002
	Code of Practice for Working Near Exposed Live Parts
SA	Electricity Act 1996
TAS	Tasmanian Electricity Supply Industry Act 1995
WA	Electricity Act 1945
	Electricity Regulations 1947
NT	Electricity Reform Act 2005
	Electricity Reform (Safety and Technical) Regulations 2005
ACT	Electricity Act 1971

Thank You,

nbn DBYD

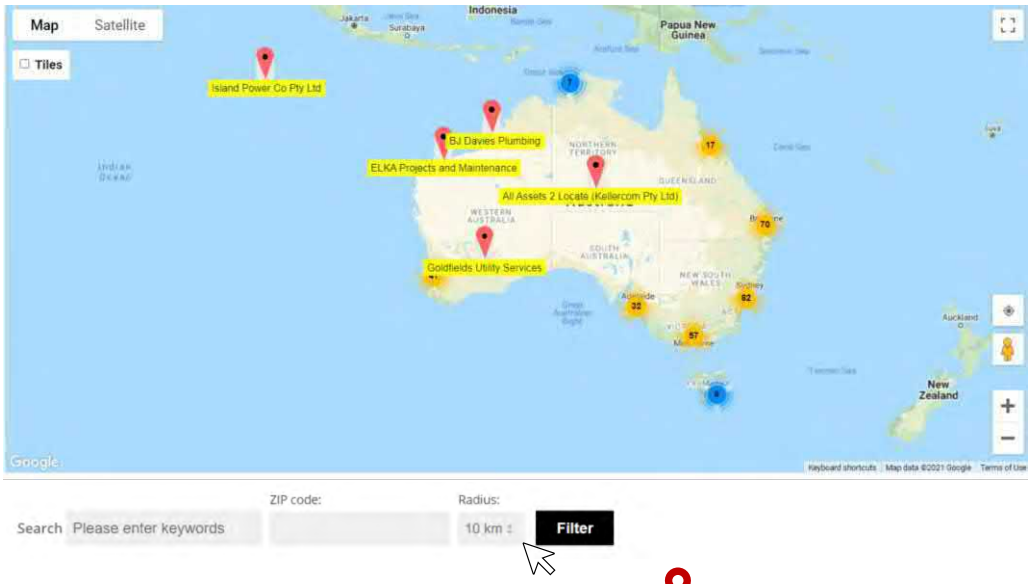
Date: 01/03/2023

Certified Locating Organisations (CLO)

Find the closest CLO to your worksite on: https://dbydlocator.com/certified-locating-organisation/

Read the disclaimer and click: Accept and Search Now

A national map and an A-Z list of Certified Locating Organisations is displayed.



Use the map to zoom to your work area and choose the closest Locator indicated.

OR search by entering the **postcode** of your work area.

1. **Enter the post/zip code**
2. **Choose your search radius**
3. **Click filter** (If there is no result, you may have to increase the search radius)
4. **Click on the closest for CLO details or view the results displayed below the map**

Locator skills have been tested, and the Organisation has calibrated location and safety equipment.

Telstra is aware of each Certified Locating Organisation and their employee locators.

Only a DBYD Certified Locator registered with a Certified Locating Organisation is authorised to access Telstra network for locating purposes.

Each Certified Locator working for a CLO is issued with a photo ID Card, authorising them to access Telstra pits and manholes for the purpose of cable and plant locations.

Please ask to see your Locators' CLO ID Card.

Before You Dig Australia

Think before you dig

This document has been sent to you because you requested plans of the Telstra network through Before You Dig Australia (BYDA).

If you are working or excavating near telecommunications cables, or there is a chance that cables are located near your site, you are responsible to avoid causing damage to the Telstra network.

Please read this document carefully. Taking your time now and following the steps below can help you avoid damaging our network, interrupting services, and potentially incurring civil and criminal penalties.

Our network is complex and working near it requires expert knowledge. Do not attempt these activities if you are not qualified to do so.

Your checklist

1. Plan

Plan your work with the latest plans of our network.

Plans provided through the BYDA process are indicative only*.

This means the actual location of our asset may differ substantially from that shown on the plans.

Refer to steps 2 and 3 to determine actual location prior to proceeding with construction.

2. Prepare

Engage a DBYD Certified Locating Organisation (CLO) via dbydlocator.com to identify, validate and protect Telstra assets before you commence work.

3. Pothole

Validate underground assets by potholing by hand or using non-destructive vacuum extraction methods.

Electronic detection alone (step 2) is not deemed to validate underground assets and must not be used for construction purposes.

If you cannot validate the Telstra network, you must not proceed with construction.

4. Protect

Protect our network by maintaining the following distances from our assets:

- 1.0m Mechanical Excavators, Farm Ploughing, Tree Removal
- 500mm Vibrating Plate or Wacker Packer Compactor
- 600mm Heavy Vehicle Traffic (over 3 tonnes) not to be driven across Telstra ducts or plant
- 1.0m Jackhammers/Pneumatic Breakers
- 2.0m Boring Equipment (in-line, horizontal and vertical)

5. Proceed

You can proceed with your work only once you have completed all the appropriate preparation, potholing and protection.

Useful information

Report any damage immediately

https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-equipment

13 22 03

If you receive a message asking for an account or phone number say "I Don't have one" Then say "Report Damage" then press 1 to speak to an operator.

Relocating assets

If your project requires the relocation of a Telstra asset, please contact the Telstra Network Integrity Group:

Request Asset Relocation Or Commercial Works (telstra.com.au)

NetworkIntegrity@team.telstra.com

1800 810 443 (AEST business hours only)

Never try to move or alter our network infrastructure without authorisation. By law, only authorised people can work on our assets or enter a facility owned or operated by us. Any interference, including unauthorised entry or tampering, may result in legal action.

Further information

Plan enquiries

1800 653 935 (AEST business hours only)

Telstra.Plans@team.telstra.com

Information on how to find cables and request asset relocations:

https://www.telstra.com.au/consumer-advice/digging-construction

Asset Plan Readers

PDF Adobe Acrobat Reader DC Install for all versions
DWF Download Design Review | DWF Viewer | Autodesk

Disclaimer and legal details

*Telstra advises that the accuracy of the information provided by Telstra conforms to Quality Level D as defined in AS5488-2013.

It is a criminal offence under the Criminal Code Act 1995 (Cth) to tamper or interfere with telecommunications infrastructure.

Telstra will also take action to recover costs and damages from persons who damage assets or interfere with the operation of Telstra's networks.

By receiving this information including the indicative plans that are provided as part of this information package you confirm that you understand and accept the risks of working near Telstra's network and the importance of taking all of the necessary steps to confirm the presence, alignments and various depths of Telstra's network. This in addition to, and not in replacement of, any duties and obligations you have under applicable law.

When working in the vicinity of a telecommunications plant you have a "Duty of Care" that must be observed. Please read and understand all the information and disclaimers provided below.

The Telstra network is complex and requires expert knowledge to interpret information, to identify and locate components, to pothole underground assets for validation and to safely work around assets without causing damage. If you are not an expert and/or qualified in these areas, then you must not attempt these activities. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers. The 5 P's to prevent damage to Telstra assets are listed above. Construction activities and/or any activities that potentially may impact on Telstra's assets must not commence without first undertaking these steps. Construction activities can include anything that involves breaking ground, potentially affecting Telstra assets.

If you are designing a project, it is recommended that you also undertake these steps to validate underground assets prior to committing to your design.

This Notice has been provided as a guide only and may not provide you with all the information that is required for you to determine what assets are on or near your site of interest. You will also need to collate and understand all of the information received from other Utilities and understand that some Utilities are not a part of the BYDA program and make your own enquiries as appropriate. It is the responsibility of the entities undertaking the works to protect Telstra's network during excavation / construction works.

Telstra owns and retains the copyright in all plans and details provided in conjunction with the applicant's request. The applicant is authorised to use the plans and details only for the purpose indicated in the applicant's request. The applicant must not use the plans or details for any other purpose.

Telstra plans or other details are provided only for the use of the applicant, its servants, agents, or Certified Locating Organisation. The applicant must not give the plans or details to any parties other than these and must not generate profit from commercialising the plans or details.

Telstra, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and or details so supplied to the applicant, its servants and agents, and the applicant agrees to indemnify Telstra against any claim or demand for any such loss or damage.

Please ensure Telstra plans and information provided always remains on-site throughout the inspection, location, and construction phase of any works.

Telstra plans are valid for 60 days after issue and must be replaced if required after the 60 days.

Data Extraction Fees

In some instances, a data extraction fee may be applicable for the supply of Telstra information. Typically, a data extraction fee may apply to large projects, planning and design requests or requests to be supplied in non-standard formats. For further details contact Telstra Planned Services.

Telstra does not accept any liability or responsibility for the performance of or advice given by a Certified Locating Organisation. Certification is an initiative taken by Telstra towards the establishment and maintenance of competency standards. However, performance and the advice given will always depend on the nature of the individual engagement.

Neither the Certified Locating Organisation nor any of its employees are an employee or agent for Telstra. Telstra is not liable for any damage or loss caused by the Certified Locating Organisation or its employees.

Once all work is completed, the excavation should be reinstated with the same type of excavated material unless specified by Telstra

The information contained within this pamphlet must be used in conjunction with other material supplied as part of this request for information to adequately control the risk of potential asset damage.

When using excavators and other machinery, also check the location of overhead power lines.

Workers and equipment must maintain safety exclusion zones around power lines

WARNING: Telstra plans and location information conform to Quality Level 'D' of the Australian Standard AS 5488 - Classification of Subsurface Utility Information. As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D. Refer to AS 5488 for further details. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans. FURTHER ON SITE INVESTIGATION IS REQUIRED TO VALIDATE THE EXACT LOCATION OF TELSTRA PLANT PRIOR TO COMMENCING CONSTRUCTION WORK. A plant location service is an essential part of the process to validate the exact location of Telstra assets and to ensure the assets are protected during construction works. The exact position of Telstra assets can only be validated by physically exposing them. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers.

Privacy Note

Your information has been provided to Telstra by BYDA to enable Telstra to respond to your BYDA request. Telstra keeps your information in accordance with its privacy statement. You can obtain a copy at www.telstra.com.au/privacy or by calling us at 1800 039 059 (business hours only).

IT'S HOW WE CONNECT

OPENING ELECTRONIC MAP ATTACHMENTS -

Telstra Cable Plans are generated automatically in either PDF or DWF file types dependant on the site address and the size of area selected. You may need to download and install free viewing software from the internet e.g.

PDF Map Files (max size A3)

Adobe Acrobat Reader (http://get.adobe.com/reader/),

DWF Map Files (all sizes over A3)

Autodesk A360 (https://360.autodesk.com/viewer) or

Autodesk Design Review (http://usa.autodesk.com/design-review/) for DWF files. (Windows)

Telstra DBYD map related enquiries

email - Telstra.Plans@team.telstra.com

1800 653 935 (AEST Business Hours only)

REPORT ANY DAMAGE TO THE TELSTRA NETWORK IMMEDIATELY

Report online - https://service.telstra.com.au/customer/general/forms/report-damage-to-telstra-equipment

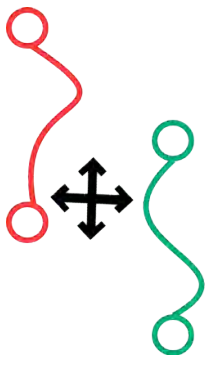
Ph: **13 22 03**

If you receive a message asking for a phone or account number say:

"I don't have one" then say "Report Damage" then press 1 to speak to an operator.

Telstra New Connections / Disconnections

13 22 00



Telstra asset relocation enquiries: 1800 810 443 (AEST business hours only).

NetworkIntegrity@team.telstra.com

https://www.telstra.com.au/consumer-advice/digging-construction

Certified Locating Organisation (CLO)

https://dbydlocator.com/certified-locating-organisation/

Please refer to attached Accredited Plant Locator.pdf

Telstra Smart Communities
Information for new developments (developers, builders, homeowners)
https://www.telstra.com.au/smart-community

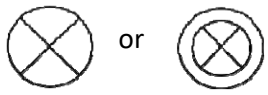
LEGEND

IT'S HOW WE CONNECT

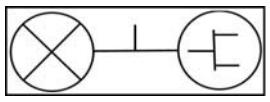
For more info contact a Certified Locating Organisation or Telstra Plan Services 1800 653 935

Exchange
(Major Cable Present)

Footway Access Chamber
(can vary from 1-lid to 12-lid)



Pillar / Cabinet
(above ground / free standing)



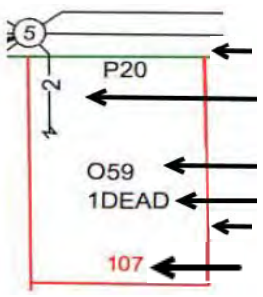
Above ground complex equipment housing (eg RIM)
Please Note: This equipment is powered by 240V Electricity

OC — Other Carrier Telecommunications Cable/Asset

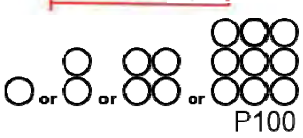
Dist — Distribution cables in Main Cable ducts

MC — Main Cable ducts on a Distribution plan

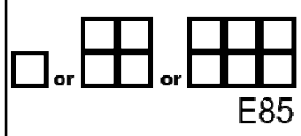
▲ — Blocked or damaged duct.



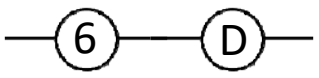
Roadside / Front Boundary
2 pair lead-in to property from pit in street 1
pair working (pair ID 059)
1 pair dead (i.e. spare, not connected)
Side / Rear Property Boundary
Property Number



Single to multiple round conduit
Configurations 1.2.4.9 respectively
(attached text denotes conduit type and size)



Multiple square conduit
Configurations 2, 4, 6 respectively
(attached text denotes conduit type and size)



Cable Jointing Pit
(number / Letter indicating Pit Type)

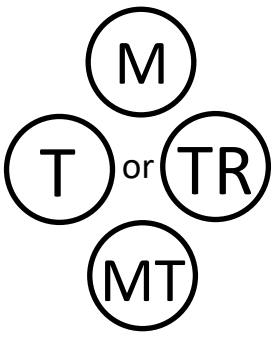
Elevated Joint
(above ground joint on buried cable)

Telstra Plant in shared Utility trench

Aerial Cable

Aerial Cable
(attached to joint Use Pole eg. Power)

Direct Buried Cable



Marker Post Installed

Buried Transponder

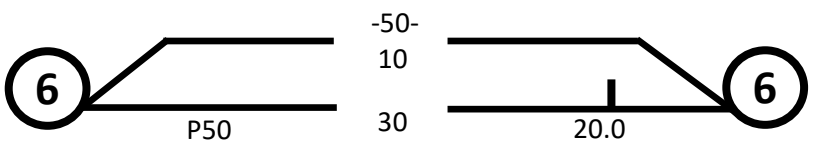
Marker Post, Transponder

Optical Fibre cable direct buried

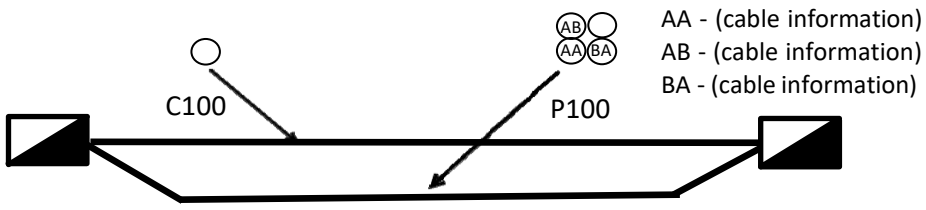
Some examples of conduit type and size:

A - Asbestos cement, P - PVC / Plastic, C - Concrete,
GI - Galanised iron, E - Earthenware
Conduit sizes *nominally* range from 20mm to 100mm
P50 50mm PVC conduit
P100 100mm PVC conduit
A100 100mm asbestos cement conduit

Some Examples of how to read Telstra Plans



One 50mm PVC conduit (P50) containing a 50-pair and a 10-pair cable between two 6-pits. approximately 20.0m apart, with a direct buried 30-pair cable along the same route



Two separate conduit runs between two footway access chambers (manholes) approximately 245m apart A nest of four 100mm PVC conduits (P100) containing assorted cables in three ducts (one being empty) and one empty 100mm concrete duct (C100) along

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Guide to reading Sydney Water DBYD Plans

This guide will help you understand our plans and what our services are.

Symbol	Meaning	Symbol	Meaning
	Sewer main with flow arrow and size type text.		Sewer vertical
	Disuses sewer main This means the sewer has been disused but remains in the ground.		Sewer pumping station
	Sewer maintenance hole with upstream depth invert.		
	Sewer Sub-surface chamber		Pressure sewer main These are also found in Vacuum sewer areas.
	Sewer Maintenance hole with overflow chamber		Pressure sewer Pump unit Alarm, electrical cable and pump unit.
	Sewer Ventshaft EDUCT		Pressure sewer property valve boundary assembly
	Sewer Ventshaft IDUCT		Pressure sewer stop valve
	Sewer property connection point With chainage to downstream maintenance hole.		Pressure sewer reducer / taper
	Sewer concrete encased section		Pressure sewer flushing point
	Sewer Rehabilitation		Vacuum sewer division valve
	Sewer terminal maintenance shaft		Vacuum sewer vacuum chamber
	Sewer maintenance shaft		Vacuum sewer clean out pot
	Sewer rodding point		Stormwater pipe
	Sewer lamphole		Stormwater channel

Symbol	Meaning	Symbol	Meaning
	Stormwater gully		Potable water stop valves with Tapers
	Stormwater maintenance hole		Potable water closed stop valve
200 PVC	Watermain – potable drinking water With size type text.		
	Disconnected watermain potable drinking water This means the watermain has been disused but remains in the ground.		Potable water air valve
	Recycled watermain		Potable water valve
	Special supply conditions – potable drinking water		Potable water scour
	Special supply conditions – recycled water		Potable water reducer / taper
	Restrained joints – Potable drinking water		Potable water vertical bends
	Sewer concrete encased section		Potable water reservoir
	Restrained joints – Potable drinking water		Recycled water is shown as per potable above. Colour as indicated
	Potable water hydrant		Private potable water main
	Potable water maintenance hole		Private recycled water main
	Potable water stop valve		Private sewer main
	Potable water stop valve with By-pass		

Pipe types

PIPE TYPES		PIPE TYPES	
ABS	Acrylonitrile Butadiene Styrene	AC	Asbestos Cement
BRICK	Brick	CI	Cast Iron
CICL	Cast Iron Cement Lined	CONC	Concrete
COPPER	Copper	DI	Ductile Iron
DICL	Ductile Iron Cement (mortar) Lined	DIPL	Ductile Iron Polymeric Lined
EW	Earthenware	FIBG	Fibreglass
FL BAR	Forged Locking Bar	GI	Galvanised Iron
GRP	Glass Reinforced Plastics	HDPE	High Density Polyethylene
MS	Mild Steel	MSCL	Mild Steel Cement Lined
IPE	Polyethylene	PC	Polymer Concrete
PP	Polypropylene	PVC	Polyvinylchloride
PVC - M	Polyvinylchloride, Modified	PVC - 0	Polyvinylchloride, Oriented
PVC - U	Polyvinylchloride, Unplasticised	RC	Reinforced Concrete
RC-PL	Reinforced Concrete Plastics Lined	S	Steel
SCL	Steel Cement (mortar) Lined	SCL IBL	Steel Cement Lined Internal Bitumen
SGW	Salt Glazed Ware	SPL	Steel Polymeric Lined
SS	Stainless Steel	STONE	Stone
VC	Vitrified Clay	WI	Wrought Iron
WS	Woodstave		

DIAL BEFORE YOU DIG www.1100.com.au

Further Information

Please consult the Dial Before You Dig enquiries page on our website.

For general enquiries please call the Customer Contact Centre on 132 092

In an emergency, or to notify Sydney Water of damage or threats to its structures, call 13 20 90 (24 hours, 7 days)

Important information about Dial Before You Dig

The material provided or made available to you by Sydney Water (including on the Sydney Water website) in relation to your Dial Before You Dig enquiry (**Information**) is provided on each of the following conditions, which you are taken to have accepted by using the Information:

1 The Information has been generated by an automated system based on the area highlighted in the "Locality Indication Only" window on your Caller Confirmation. It is your responsibility to ensure that the dig site is properly defined when submitting your Dial Before You Dig enquiry and, if the Information does not match the dig site, to resubmit your enquiry for the correct dig site.

2 Neither Sydney Water nor Dial Before You Dig make any representation or give any guarantee, warranty or undertaking (express or implied) as to the currency, accuracy, completeness, effectiveness or reliability of the Information. The Information, including Sydney Water plans and work-as-executed diagrams, amongst other things:

(a) may not show all existing structures, including Sydney Water's pipelines, particularly in relation to newer developments and in relation to structures owned by parties who do not participate in the Dial Before You Dig service

(b) may be out of date and not show changes to surface levels, road alignments, fences, buildings and the like

(c) is approximate only and is therefore not suitable for scaling purposes

(d) does not show locations of property services (often called house service lines) belonging to or servicing individual customers, which are usually connected to Sydney Water's structures.

3 You are responsible for, amongst other things:

(a) exposing underground structures, including Sydney Water's pipelines, by pot-holing using hand-held tools or vacuum techniques so as to determine the precise location and extent of structures before any mechanical means of excavation are used

(b) the safe and proper excavation of and for underground works and structures, including having regard to the fact that asbestos cement pipelines, which can pose a risk to health, may form part of Sydney Water's water and sewerage reticulation systems

(c) protecting underground structures, including Sydney Water's pipelines, from damage and interference

(d) maintaining minimum clearances between Sydney Water's structures and structures belonging to others

(e) ensuring that backfilling of excavation work in the vicinity of Sydney Water's structures complies with Sydney Water's standards contained on its website or otherwise communicated to you

(f) notifying Sydney Water immediately of any damage caused or threat of damage to Sydney Water's structures

(g) ensuring that plans are approved by Sydney Water (usually signified by stamping) prior to landscaping or building over or in the vicinity of any Sydney Water structure

(h) ensuring that the Information is used only for the purposes for which Sydney Water and Dial Before You Dig intended.

4 You acknowledge that you use the Information at your own risk. In consideration for the provision of the Dial Before You Dig service and the Information by Sydney Water and Dial Before You Dig, to the fullest extent permitted by law

(a) all conditions and guarantees concerning the Information (whether as to quality, outcome, fitness, care, skill or otherwise) expressed or implied by statute, common law, equity, trade, custom or usage or otherwise are expressly excluded and to the extent that those statutory guarantees cannot be excluded, the liability of Sydney Water and Dial Before You Dig to you is limited to either of the following as nominated by Sydney Water in its discretion, which you agree is your only remedy:

(i) the supplying of the Information again; or
(ii) payment of the cost of having the Information supplied again;
(b) in no event will Sydney Water or Dial Before You Dig be liable for, and you release Sydney Water and Dial Before You Dig from, any Loss arising from or in connection with the Information, including the use of or inability to use the Information and delay in the provision of the Information:
(i) whether arising under statute or in contract, tort or any other legal doctrine, including any negligent act, omission or default (including wilful default) by Sydney Water or Dial Before You Dig; and
(ii) regardless of whether Sydney Water or Dial Before You Dig are or ought to have been aware of, or advised of, the possibility of such loss, costs or damages;
(c) you will indemnify Sydney Water and Dial Before You Dig against any Loss arising from or in connection with Sydney Water providing incorrect or incomplete information to you in connection with the Dial Before You Dig service; and
(d) you assume all risks associated with the use of the Dial Before You Dig and Sydney Water websites, including risk to your computer, software or data being damaged by any virus, and you release and discharge Sydney Water and Dial Before You Dig from all Loss which might arise in respect of your use of the websites.

5 "**Sydney Water**" means Sydney Water Corporation and its employees, agents, representatives and contractors. "**Dial Before You Dig**" means Dial Before You Dig Incorporated and its employees, agents, representatives and contractors. References to "**you**" include references to your employees, agents, representatives, contractors and anyone else using the Information. References to "**Loss**" include any loss, cost, expense, claim, liability or damage (including arising in connection with personal injury, death or any damage to or loss of property and economic or consequential loss, lost profits, loss of revenue, loss of management time, opportunity costs or special damages). To the extent of any inconsistency, the conditions in this document will prevail over any other information provided to you by Sydney Water and Dial Before You Dig.
In an emergency, or to notify Sydney Water of damage or threats to its structures, call 13 20 90 (24 hours, 7 days)

Further information and guidance is available in the Building Development and Plumbing section of Sydney Water's website at www.sydneywater.com.au, where you will find the following documents under 'Dial Before You Dig':

- Avoid Damaging Water and Sewer Pipelines
- Water Main Symbols
- Depths of Mains
- Guidelines for Building Over/Adjacent to Sydney Water Assets
- Clearances Between Underground Services

Or call **13 20 92** for Customer Enquires.
Note: The lodging of enquiries via **www.1100.com.au** will enable you to receive colour plans in PDF format 24 hours a day, 7 days a week via email.

A0

MAMRE

ABBOTTS

RD

ALDINGTON

RD

MAMRE

RD

KERRS

AVE

CLIFTON

AVE

KERRS

DBYD Address:
1016-1028 Mamre Road
Kemps Creek NSW 2178

DBYD Job No: 33723003

DBYD Sequence No: 221801110

Scale: 1:2000

Date of Production: 01/03/2023

Plan 1 of 1

N

0m 30m 60m 90m 120m 150m

If further clarification is required, please contact:
Endeavour Energy
Phone: (02) 9853 4161 (8:00am-4:30pm Mon-Fri)
Emergency Phone Number: 131 003

BYDA Underground Search Report

Date: 01/03/2023

BYDA Sequence No: 221801111 **BYDA Job No:** 33723003

ENDEAVOUR ENERGY ASSETS AFFECTED

To:	Andrew Hunt	Company:	14 617 358 808
Address:	Unit 6,7 Millennium Court, Silverwater, NSW 2128		
Cust. ID:	3138116	Email:	andrew.hunt@ade.group
Phone:	+61405685962		
Enquiry Location:	1016-1028 Mamre Road, Kemps Creek, NSW 2178		

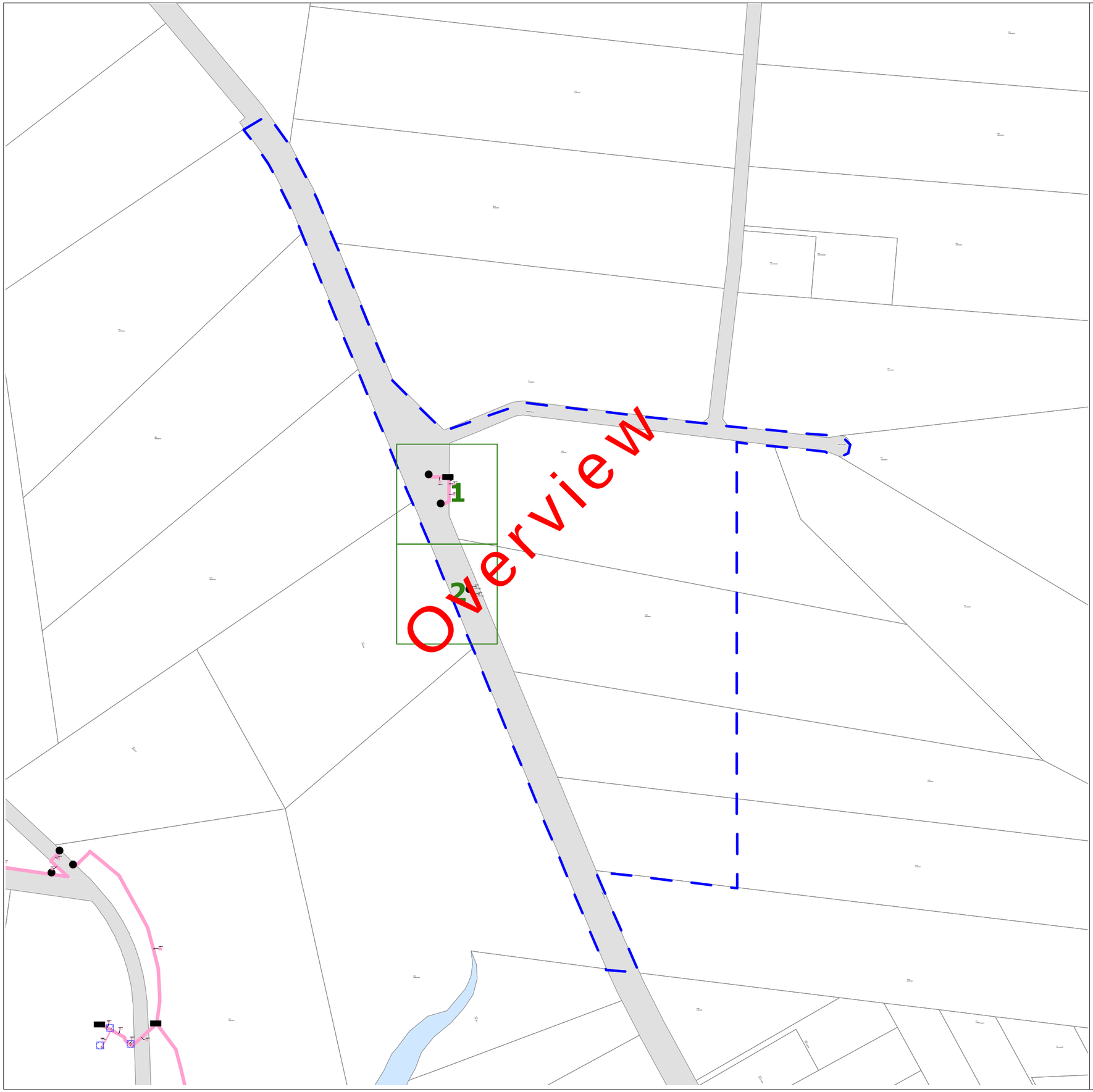
Our Search has shown that **UNDERGROUND ASSETS ARE PRESENT** on our plans within the nominated enquiry location. This search is based on the graphical position of the excavation site as denoted in the BYDA customer confirmation sheet.

WARNING

- **All electrical apparatus shall be regarded as live until proved de-energised.** Contact with live electrical apparatus will cause severe injury or death.
- Underground assets may be congested at the approach to bridges and other structures. Typical asset depths and alignment may vary substantially, rising and falling sharply and at much shallower depths than elsewhere as they are channelled into shared allocated spaces on bridges and other structures. Additional precautions and underground asset location methods will be required in proximity to bridges and other structures.
- In accordance with the *Electricity Supply Act 1995*, you are obliged to report any damage to Endeavour Energy Assets immediately by calling **131 003**.
- The customer must obtain a new set of plans from Endeavour Energy if work has not been started or completed within twenty **(20)** working days of the original plan issue date.
- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earth grids may exist and their location **may not** be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Endeavour Energy plans **do not** show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be made available at the worksite where excavation is to be undertaken in either printed or electronic format. If the plans are in an electronic format, they must be in a format visible on a screen size 10 inches or greater. Plans must be reviewed and understood by the crew on site prior to commencing excavation.
- Non-destructive water excavation must be operated at or below 2000PSI. Any operation exceeding 2000PSI must be classed and treated as a destructive excavation practice

SUPPLEMENTARY MATERIAL

Material	Purpose	Location
BYDA Cover Letter	Endeavour Energy BYDA response Cover Letter	Attached
BYDA Important Information & Disclaimer	Endeavour Energy disclaimer, responsibilities and information on understanding plans	Attached
BYDA Response Plans	Endeavour Energy BYDA plans	Attached
Work Cover NSW *"Work near underground assets: Guide"*	Guideline for anyone involved in construction work near underground assets	Contact Work Cover NSW for a copy
Work Cover NSW *"Excavation work: Code of practice"*	Practical guidance on managing health and safety risks associated with excavation	URL [Click Here]
Safe Work Australia *"Working in the vicinity of overhead and underground electric lines guidance material"*	Provides information on how to manage risks when working in the vicinity of overhead and underground electric lines at a workplace	URL [Click Here]
Endeavour Energy Safety Brochures & Guides	To raise awareness of dangers of working on or near Endeavour Energy's assets	URL [Click Here]



Endeavour Energy

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INFORMATION PROVIDED BY ENDEAVOUR ENERGY

- Any plans provided pursuant to this service are intended to show the approximate location of underground assets relative to road boundaries, property fences and other structures at the time of installation.
- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

DISCLAIMER

Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in the plans is as accurate as possible it will accept no liability for inaccuracies in the information shown on such plans.

or — Street light column

Padmount substation

or — Overground pillar (O.G.Box)

Underground pit

Duct run

Cable run

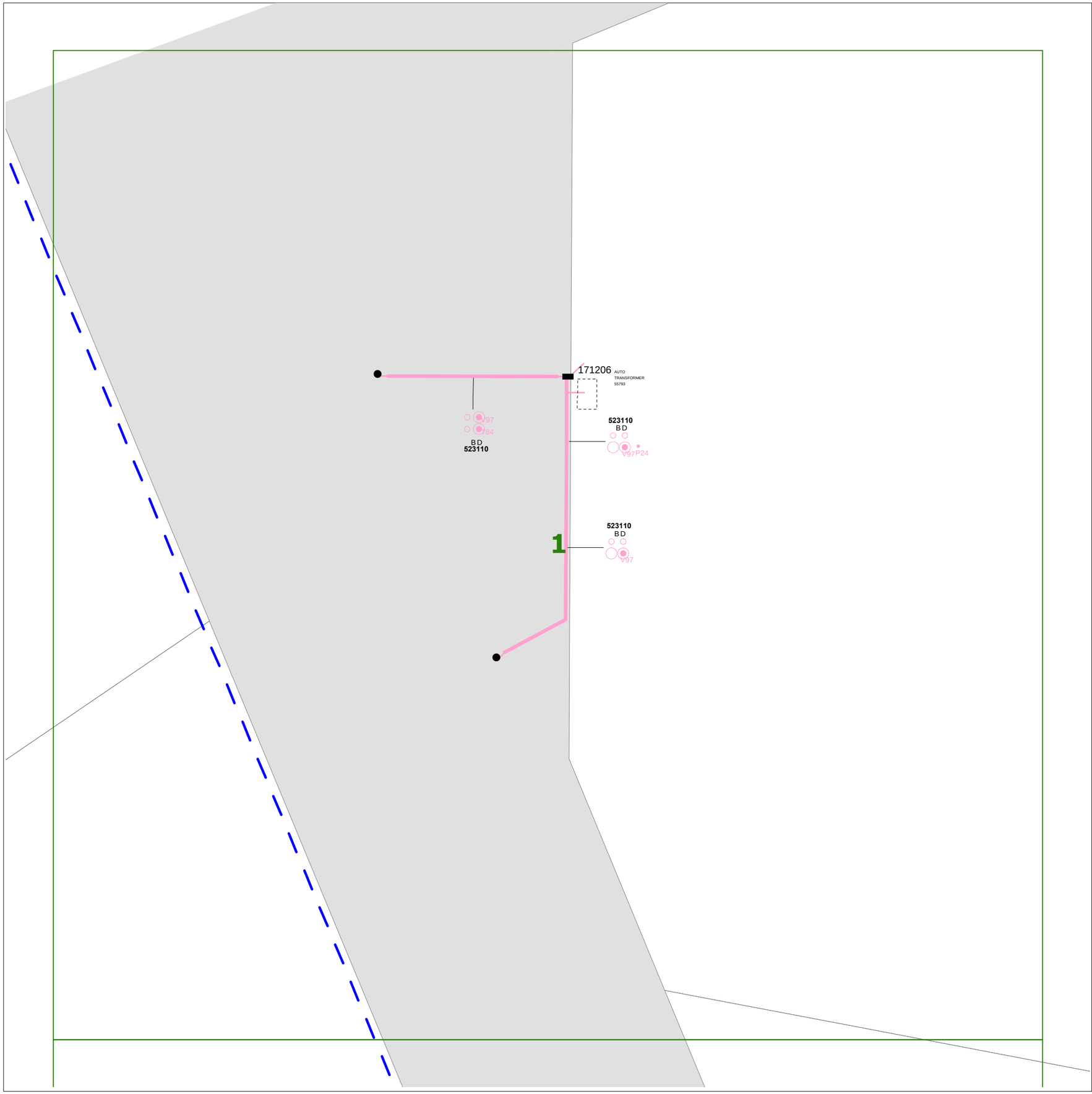
Typical duct section

Asbestos warning

N

NOT TO SCALE

DBYD Sequence No.:	221801111
Issued Date:	01/03/2023



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- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earth grids may exist and their location **may not** be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Endeavour Energy plans **do not** show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be made available at the worksite where excavation is to be undertaken in either printed or electronic format. If the plans are in an electronic format, they must be in a format visible on a screen size 10 inches or greater. Plans must be reviewed and understood by the crew on site prior to commencing excavation.
- Non-destructive water excavation must be operated at or below 2000PSI. Any operation exceeding 2000PSI must be classed and treated as a destructive excavation practice

INFORMATION PROVIDED BY ENDEAVOUR ENERGY

- Any plans provided pursuant to this service are intended to show the approximate location of underground assets relative to road boundaries, property fences and other structures at the time of installation.
- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

DISCLAIMER

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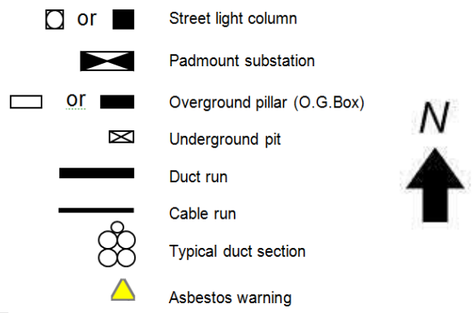
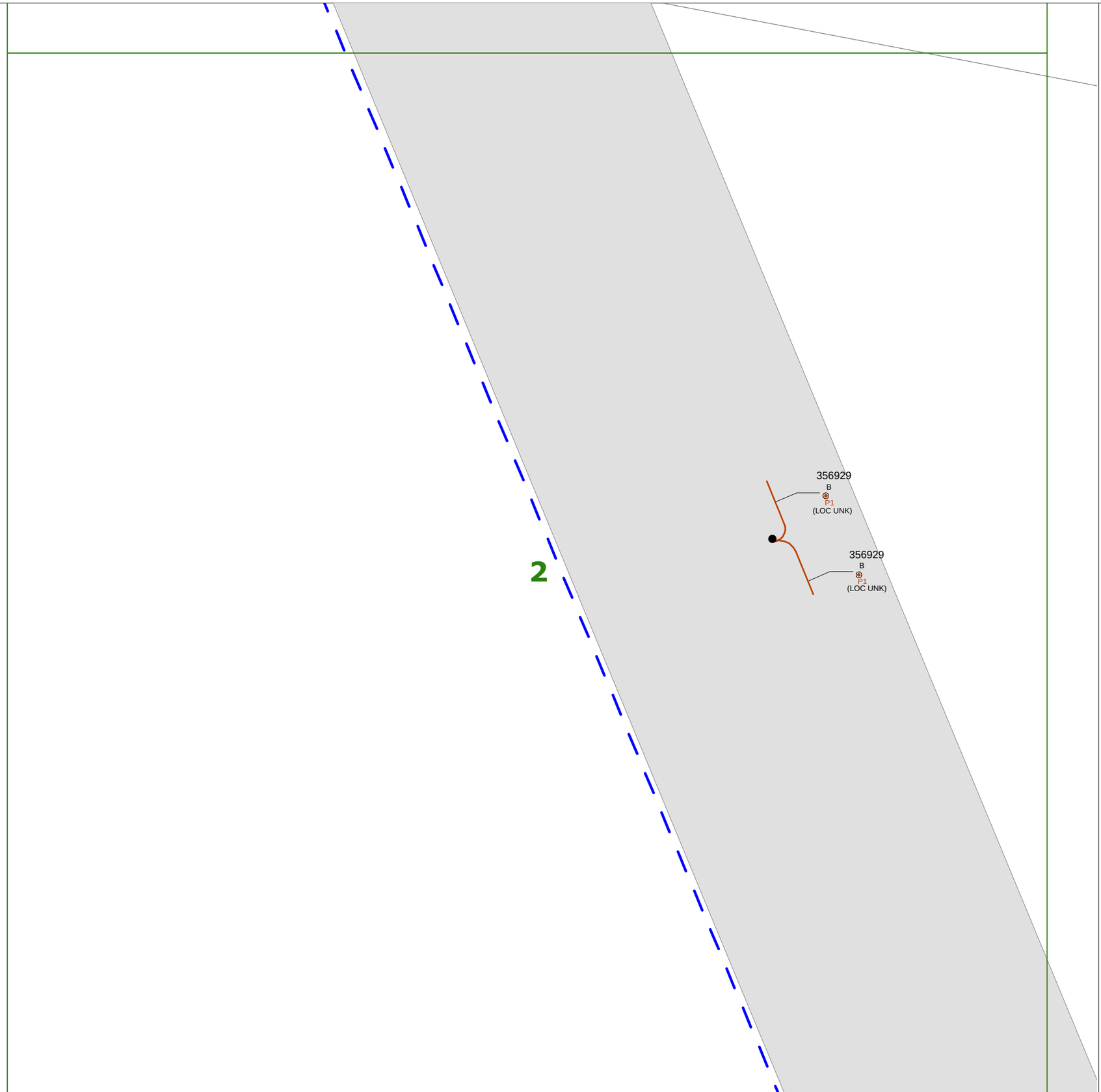


NOT TO SCALE

DBYD Sequence No.:	221801111
Issued Date:	01/03/2023



Endeavour Energy

WARNING

- **All electrical apparatus shall be regarded as live until proved de-energised.** Contact with live electrical apparatus will cause severe injury or death.
- Underground assets may be congested at the approach to bridges and other structures. Typical asset depths and alignment may vary substantially, rising and falling sharply and at much shallower depths than elsewhere as they are channelled into shared allocated spaces on bridges and other structures. Additional precautions and underground asset location methods will be required in proximity to bridges and other structures.
- In accordance with the *Electricity Supply Act 1995*, you are obliged to report any damage to Endeavour Energy Assets immediately by calling **131 003**.
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or — Street light column

Padmount substation

or — Overground pillar (O.G.Box)

Underground pit

Duct run

Cable run

Typical duct section

Asbestos warning

N

NOT TO SCALE

DBYD Sequence No.:	221801111
Issued Date:	01/03/2023

PENRITH CITY COUNCIL

Sequence No: 221801108
Job No: 33723003
Location: 1016-1028 Mamre Road, Kemps Creek, NSW 2178

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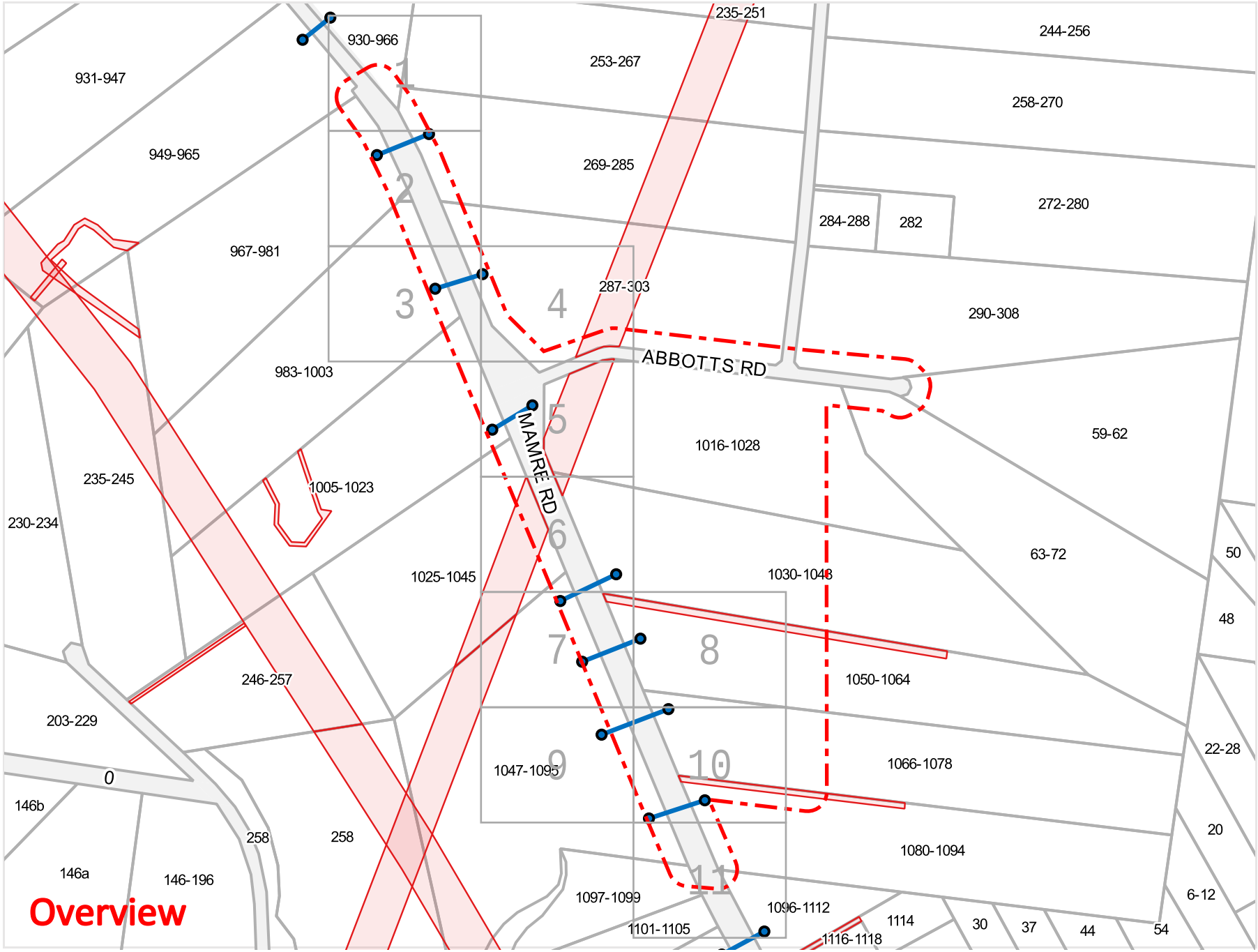

Legend

- Stormwater Pit
- Stormwater Line
- Easement
- Groundwater Monitoring Well (PSM)
- Groundwater Monitoring Well (JB&G)

N

Scale: 1:8200
Expires: 29 Mar 2023

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Sequence No: 221801108
Job No: 33723003
Location: 1016-1028 Mamre Road, Kemps Creek, NSW 2178

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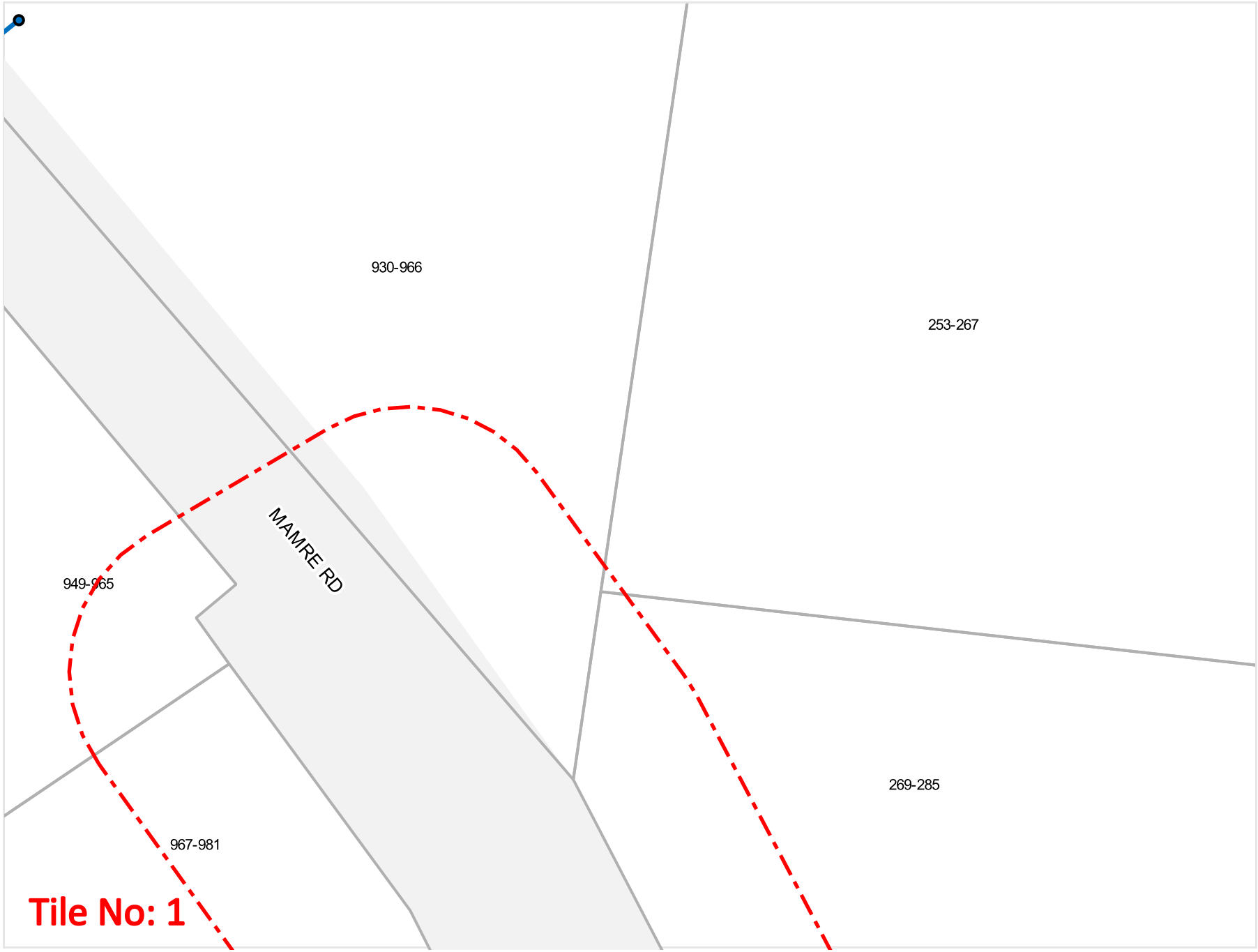
The Essential First Step.



Legend

- Stormwater Pit
- Stormwater Line
- Easement
- Groundwater Monitoring Well (PSM)
- Groundwater Monitoring Well (JB&G)

N

Scale: 1:1000
Expires: 29 Mar 2023

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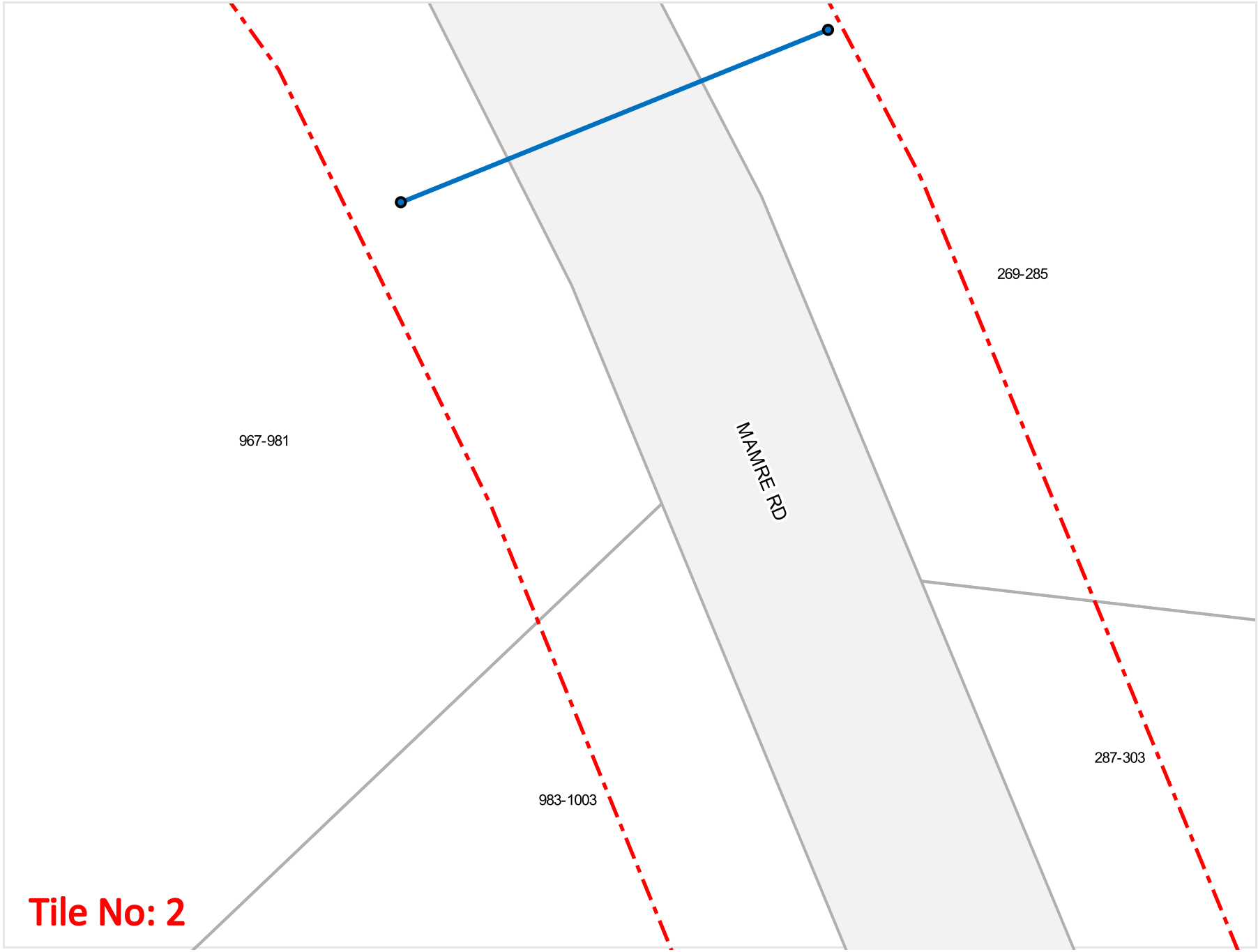

Legend

- Stormwater Pit
- Stormwater Line
- Easement
- Groundwater Monitoring Well (PSM)
- Groundwater Monitoring Well (JB&G)

N

Scale: 1:1000
Expires: 29 Mar 2023

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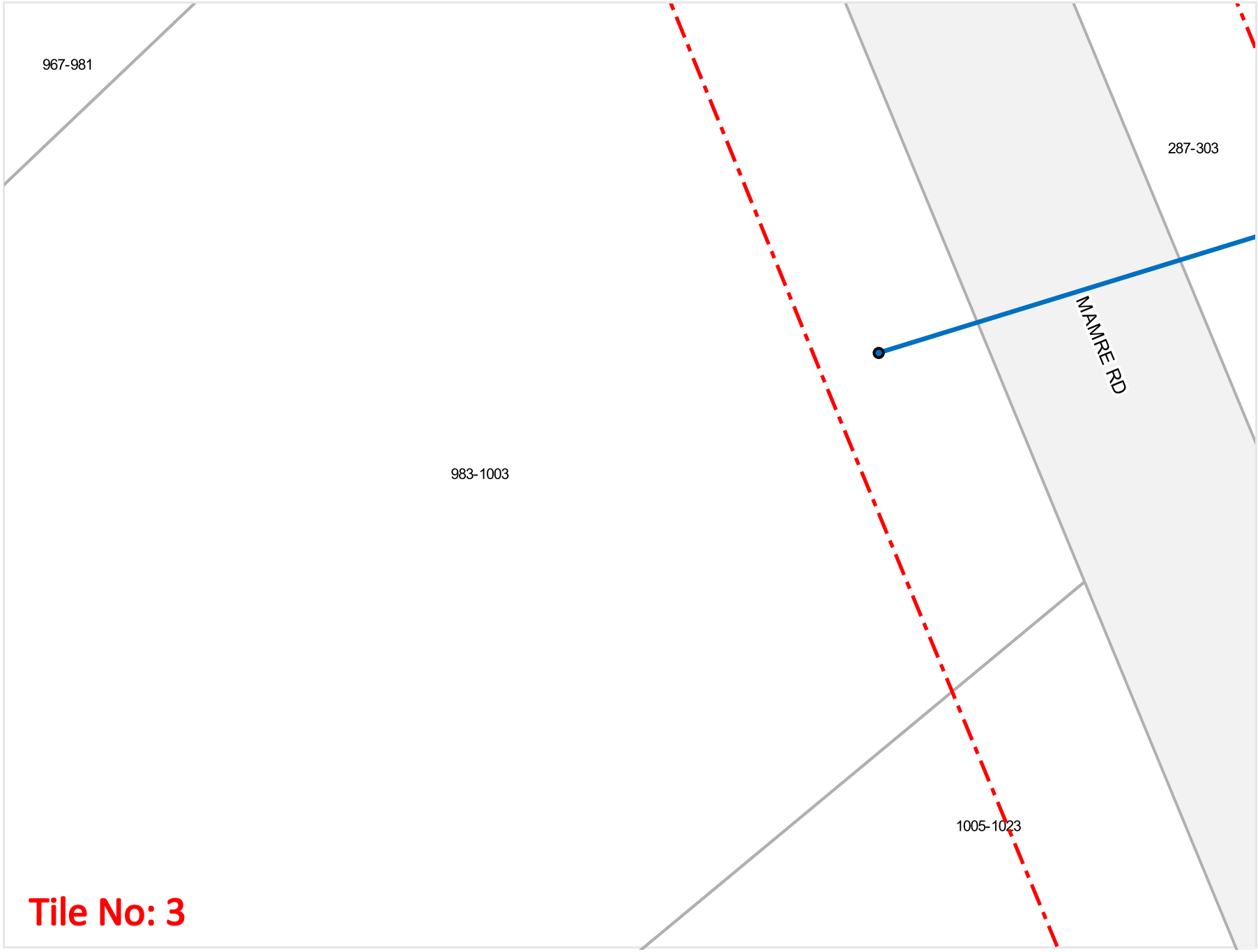

Legend

- Stormwater Pit
- Stormwater Line
- Easement
- Groundwater Monitoring Well (PSM)
- Groundwater Monitoring Well (JB&G)

N

Scale: 1:1000
Expires: 29 Mar 2023

Tile No: 3

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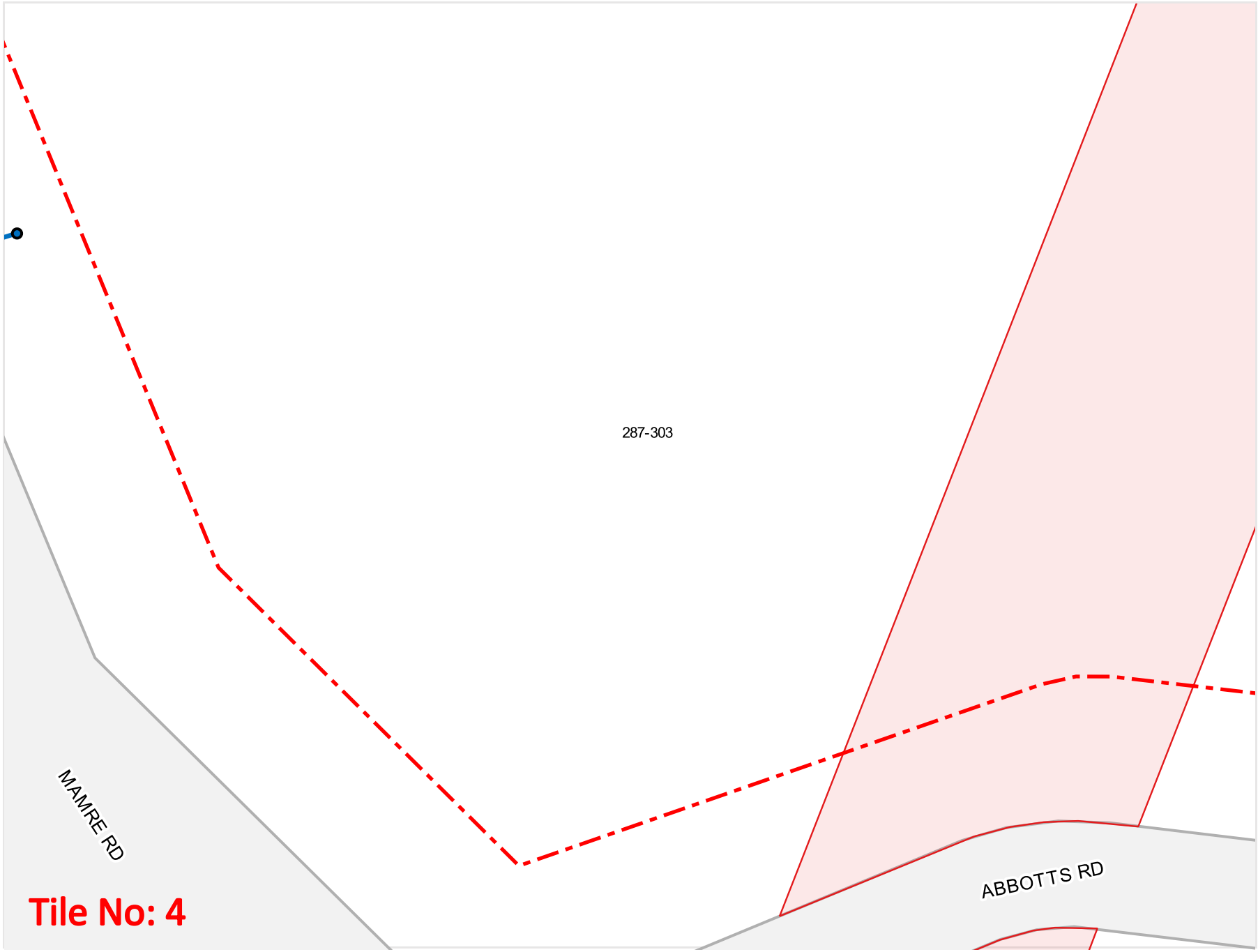

Legend

- Stormwater Pit
- Stormwater Line
- Easement
- Groundwater Monitoring Well (PSM)
- Groundwater Monitoring Well (JB&G)

N

Scale: 1:1000
Expires: 29 Mar 2023

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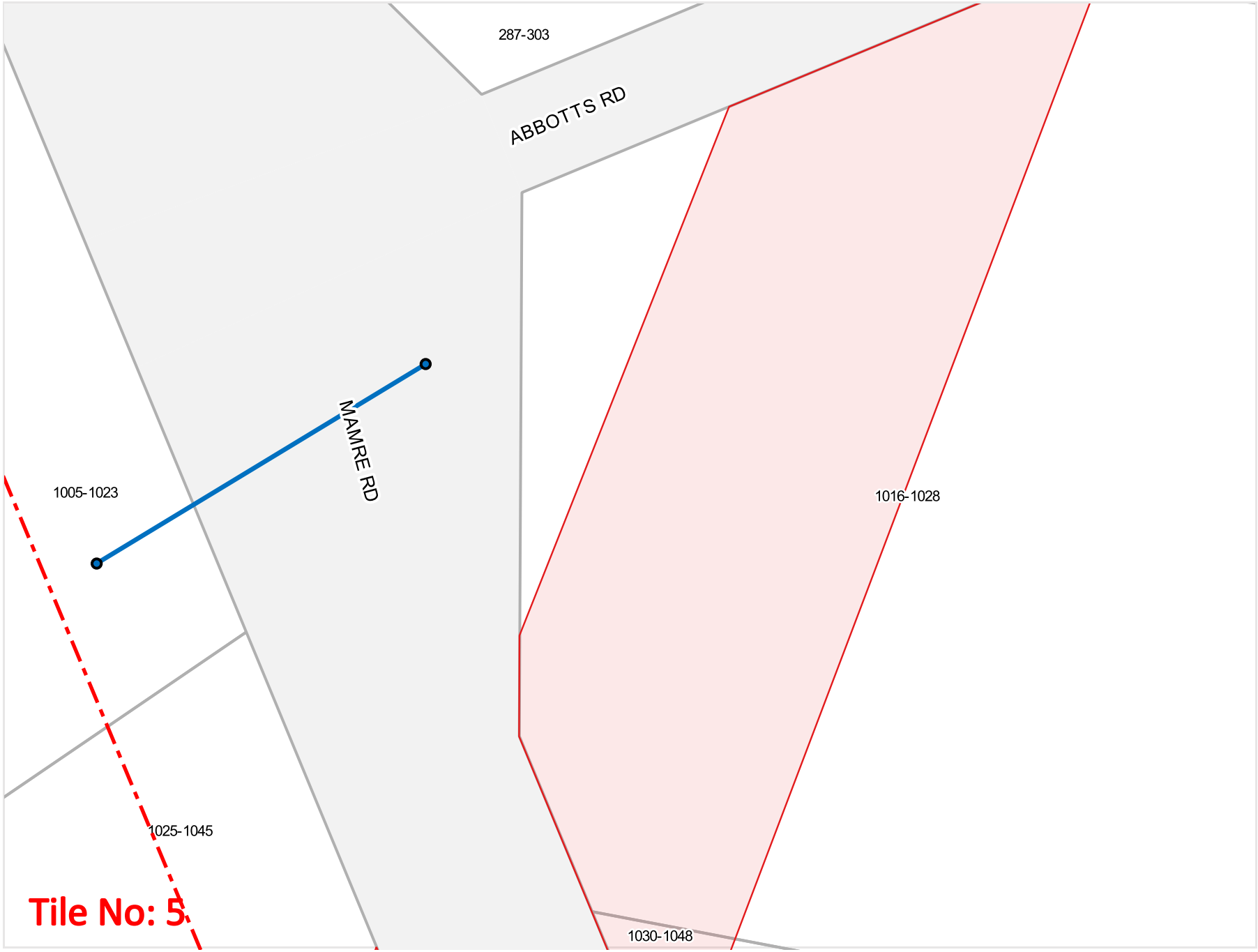

Legend

- Stormwater Pit
- Stormwater Line
- Easement
- Groundwater Monitoring Well (PSM)
- Groundwater Monitoring Well (JB&G)

N

Scale: 1:1000
Expires: 29 Mar 2023

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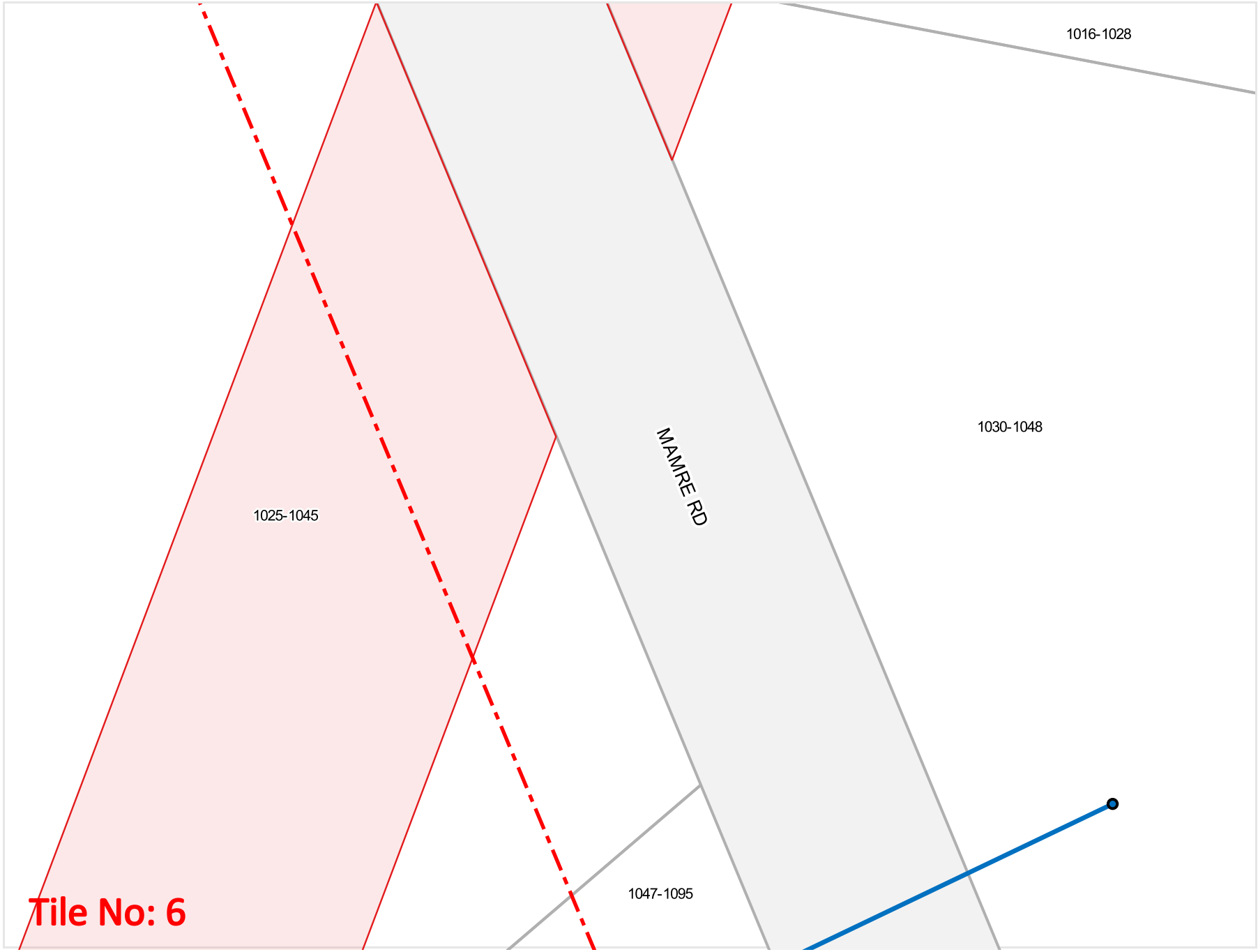

Legend

- Stormwater Pit
- Stormwater Line
- Easement
- Groundwater Monitoring Well (PSM)
- Groundwater Monitoring Well (JB&G)

N

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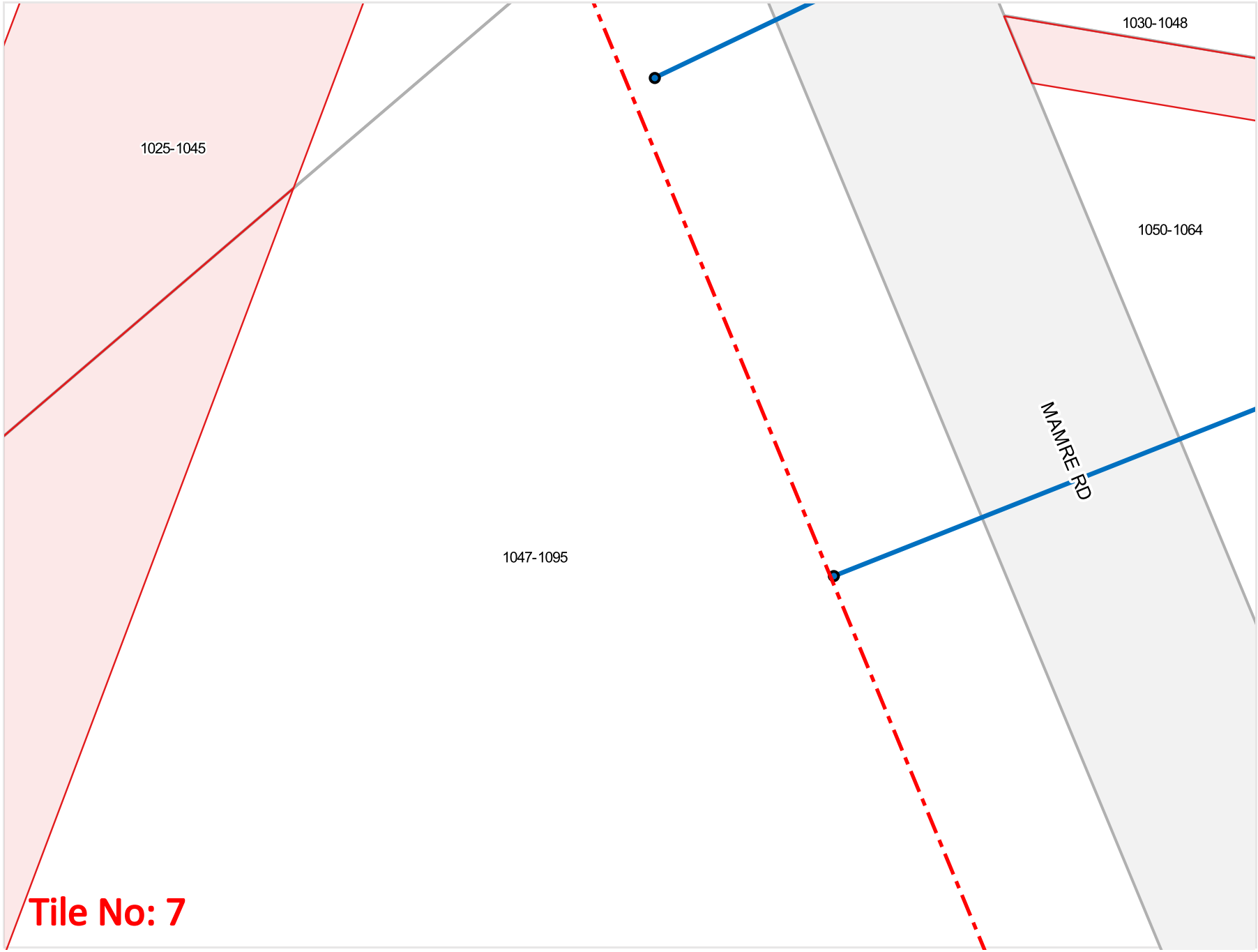

Legend

- Stormwater Pit
- Stormwater Line
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N

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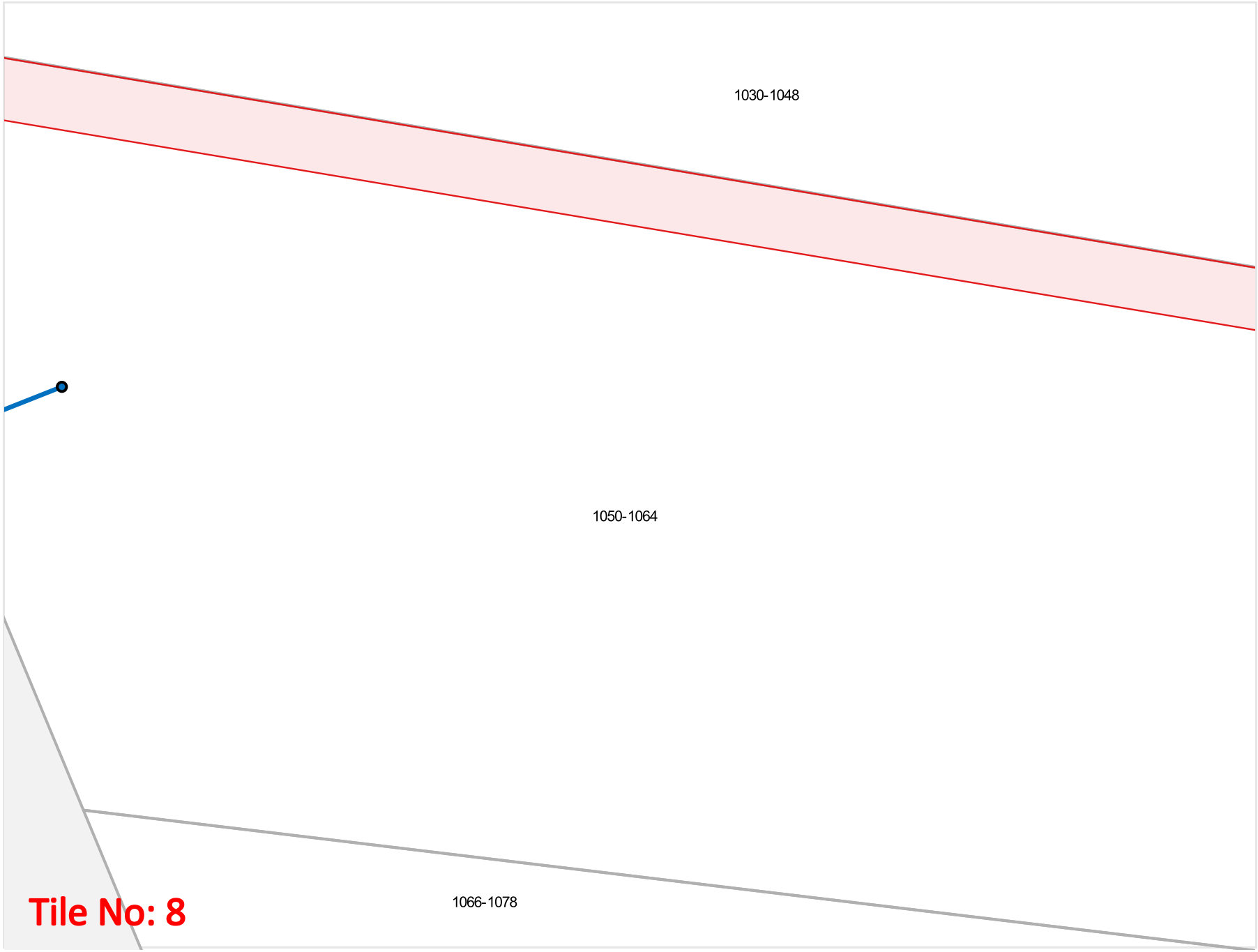

Legend

- Stormwater Pit
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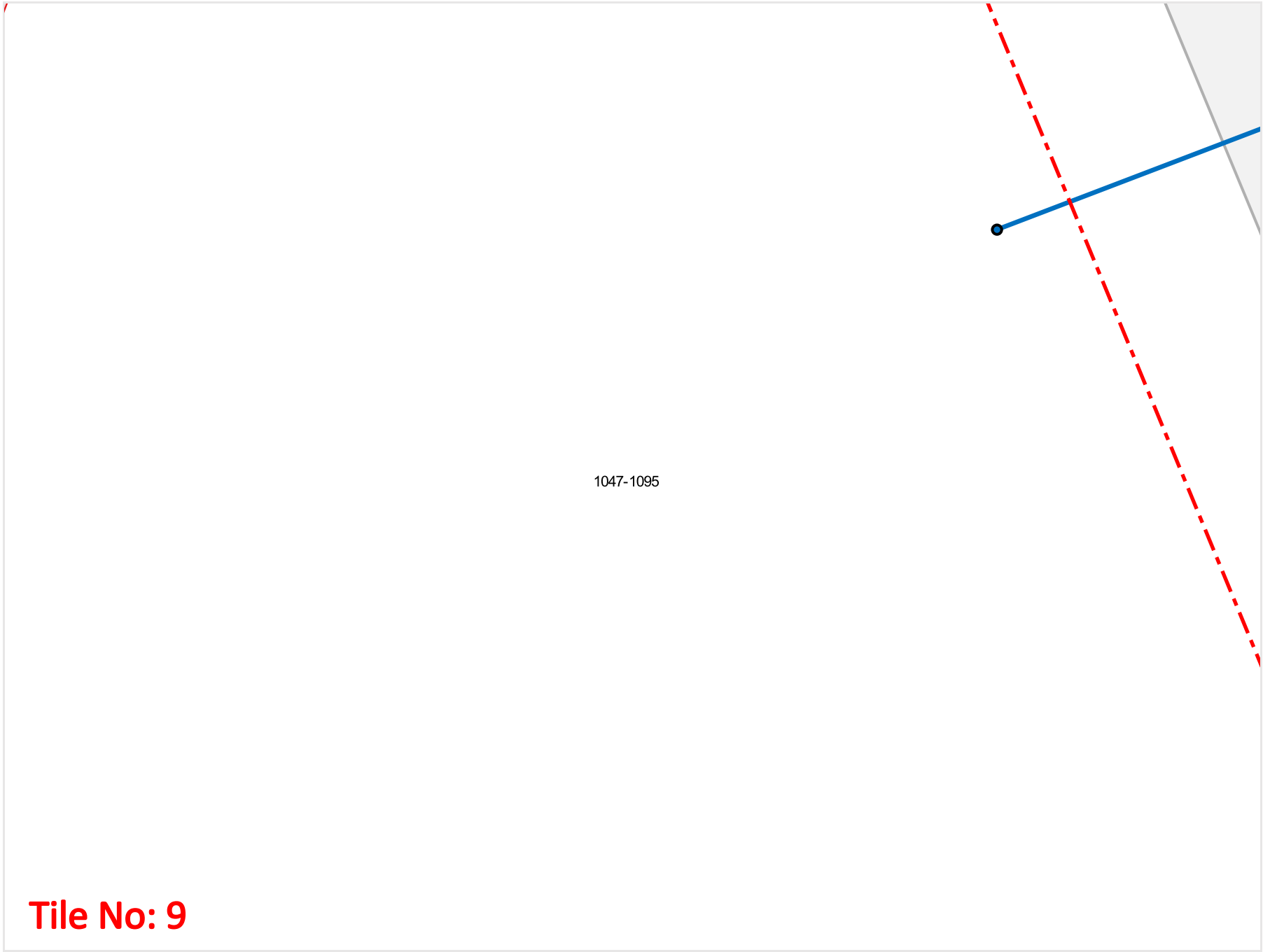

Legend

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N

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Tile No: 9

PENRITH CITY COUNCIL

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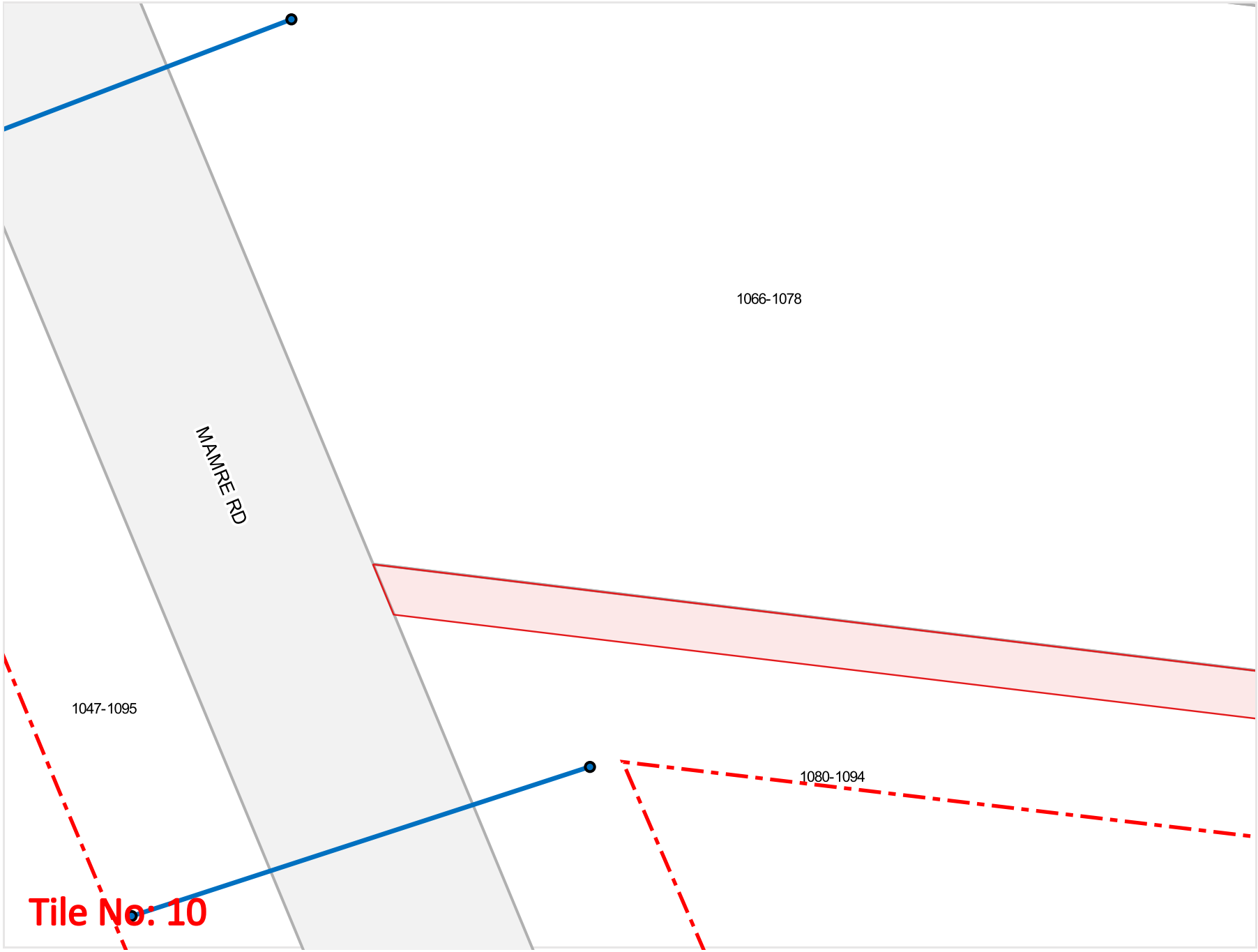

Legend

- Stormwater Pit
- Stormwater Line
- Easement
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- Groundwater Monitoring Well (JB&G)

N

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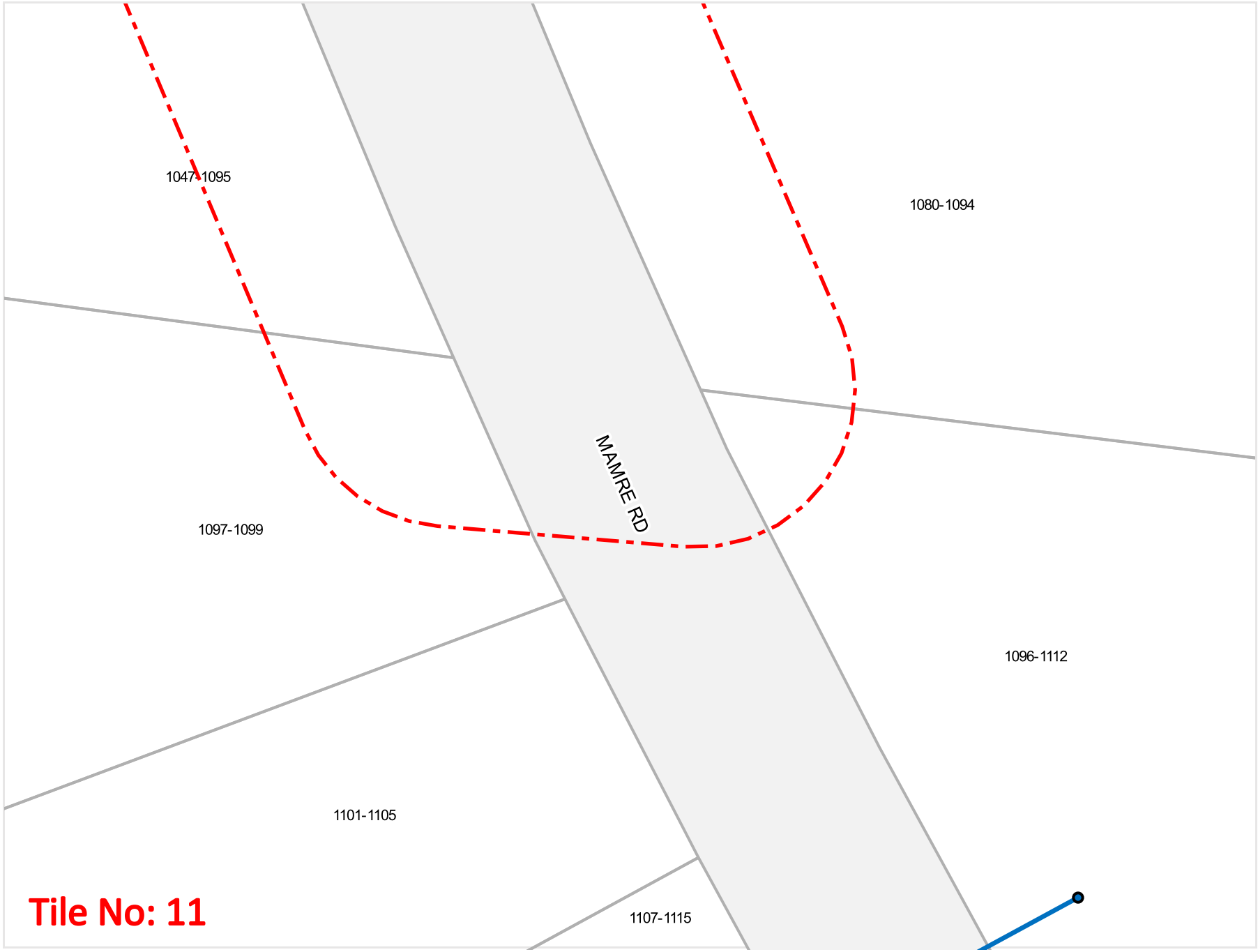

Legend

- Stormwater Pit
- Stormwater Line
- Easement
- Groundwater Monitoring Well (PSM)
- Groundwater Monitoring Well (JB&G)

N

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ADECONSULTINGGROUP
SOLUTIONS THROUGH INNOVATION

Further details regarding ADE's Services are available via

info@ade.group www.ade.group

ADE Consulting Group Pty Ltd

Sydney
Unit 6/7 Millennium Court,
Silverwater, NSW 2128 Australia

Newcastle
Unit 9/103 Glenwood Drive
Thornton, NSW 2322, Australia

ADE Consulting Group (QLD) Pty Ltd

Brisbane
Unit 3/22 Palmer Place
Murarrie, QLD 4172, Australia

ADE Consulting Group (VIC) Pty Ltd

Melbourne
Unit 4/95 Salmon Street
Port Melbourne, VIC 3207, Australia